Plate 1.

Fig. 1.

Fig. 2.

Wm. Burges, Exeter, delt.  L. Saill.

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# A TREATISE

ON

# VETERINARY MEDICINE,

IN FOUR VOLUMES.

## VOL. III.

CONTAINING

## Practical Observations

ON

## SOME IMPORTANT DISEASES OF THE HORSE;

VIZ.

THE GLANDERS, FARCY, STAGGERS, INFLAMMATION OF THE LUNGS AND BOWELS, THE PREVENTION AND TREATMENT OF LAMENESS, AND PRECAUTIONS TO BE OBSERVED IN PURCHASING HORSES.

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THIRD EDITION.

WITH CONSIDERABLE ADDITIONS.

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# PREFACE.

THE gradual progress, which is observable in the advancement of the arts and sciences, proceeding from the diligence and abilities of numbers, rather than from the genius or discoveries of individuals, holds out an encouragement to all, exciting each by the hope that he may add something to the general stock of knowledge. Every one, therefore, who may consider himself sufficiently fortunate to have any thing to offer, may be expected to present the result of his inquiries, whether it be much or little.

The author of the following Treatise has not the good fortune to be able to propose an infallible remedy for any of

the diseases incident to his fellow creatures; but the knowledge, which the experience of several years has enabled him to attain in his profession, he communicates to the public; trusting, that, although his attention has been confined to matters of less moment, yet some importance may be attached to the object he has pursued—the preservation of one of our most useful domestic animals.

Since the institution of the Veterinary College, much has been done for the improvement of veterinary medicine; and the diseases of the horse have been more successfully treated: a large field, however, still remains open for discovery; many disorders are but imperfectly understood, and some have resisted every effort of medical skill. Previous to the adoption of the present system of education, and more liberal diffusion of veterinary know-

ledge, the most experienced practitioner could advance but little beyond those who had preceded him; and the progress of the art, during a long series of years, was, of course, inconsiderable: but, since the establishment of the college, veterinary education has assumed a new form, and is conducted on the same principles as the other departments of medical science. By pursuing this track, there is reason to hope, that the veterinary art will continue to advance, and its progress keep pace with the other branches of knowledge.

No one can be more willing than the author of this work to give a just tribute of praise to those writers, who have handed down to us the practical information they had obtained: their errours he would point out with indulgence, rather than with supercilious severity: under the difficulties they had to encounter,

their works could only be expected to contain some useful observations, mixed with much errour. It is pleasing, however, to reflect, that the disadvantages, under which the art has hitherto laboured, are, in the present age, gradually diminishing; we have now the satisfaction of seeing it countenanced by all ranks, and can congratulate the profession on the daily acquisition of talent and respectability.

The diseases, which form the subject of the present work, are, perhaps, of all that are incidental to the horse, the most destructive; they have, therefore, excited much attention among veterinary practitioners.

The glanders have long been a particular object of investigation; and it is much to be regretted, that the labour bestowed on the inquiry has not been more successful: the diligence, however,

with which it has been pursued by many practitioners, has been productive of advantage; much light has been thrown upon the nature of the disease; and, though we have failed in the main point, the discovery of a cure, we have materially improved our knowledge with respect to its prevention.

The expectation of discovering a remedy for glanders appears to have been very sanguinely entertained by those who considered it as a local disease; but, after all the attention they have bestowed upon it, the anxious endeavours they have employed, and the various experiments they have made, the complaint has baffled all their efforts.

Among the first of that class of veterinarians we may rank La Fosse, a celebrated French practitioner, who imagined he had accomplished the desirable object. He made use of astringent and

other preparations, which he applied, by means of a syringe, to the nostrils and cavities connected with them; after having made appropriate openings in the bones covering these cavities. Bartlet, an English writer on farriery, was a strong advocate for the same plan; and published a plate for the purpose of describing more accurately the seat of the disease, and the mode of performing the operation. Practitioners, however, were not long in discovering the inefficacy of this boasted remedy, and very soon gave up the attempt. It is evident, that neither La Fosse nor Bartlet had a correct knowledge of the disease, but confounded it with some other complaints, to which it bears some resemblance; for they describe seven kinds of glanders, four of which they admit to be incurable. For my own part, I must candidly confess, that, after having for many years paid

considerable attention to the subject, I have not been so fortunate as to discover a remedy; nor has it ever come to my knowledge, that any other practitioner has been more successful. It is true, we have often heard of ignorant farriers, who have professed to cure the disease; but, even if we could generally depend on the veracity of such men, I should place no reliance on their assertions in this particular instance: the limited extent of their knowledge and opportunities of seeing the disease, rarely enables them to distinguish the glanders from those diseases to which, in some respects, they bear a resemblance; to say nothing of the tendency which such men almost invariably have of raising their importance and reputation, by magnifying the value of their performances. The present professor of the Veterinary College, Mr. Coleman, has devoted much time and attention to the

subject. I believe he has tried, without success, every method and medicine that he himself could devise, or that could be suggested by others. Many other respectable practitioners have been no less industrious, and equally unsuccessful. With such authorities as these, I think no one will hesitate in admitting, that the glanders have hitherto proved incurable. It should be recollected, that the men who pretend to cure the glanders are ignorant of the principles of the art, which they presume to practise: wholly without education, deprived, from their situation in life, of the advantages of much experience, their opportunities of witnessing the progress of the disease must be very limited, and, consequently, their judgment, as to its real nature, very circumscribed. On the contrary, the regular practitioners, who have made such repeated attempts to discover a remedy,

and have candidly admitted the failure of their endeavours, have possessed an extensive field for experience, combined with all the advantages derived from a well-grounded knowledge of their profession, and a free communication of the experiments and opinions of each other.

The ravages of this fatal disorder have excited a correspondent degree of anxiety among the profession to discover an antidote; and the merit that will accrue to the fortunate accomplisher of this desirable object, will be in proportion to the difficulties that are to be surmounted.

Mr. Coleman may justly, I believe, be considered as the first veterinarian who had any correct knowledge of the disease; and it is to be regretted, that he has not yet published the result of his investigation: should he have abandoned the pursuit, the knowledge he has

acquired would serve as a foundation for those who may succeed him in this interesting research. With the advantages to be derived from the light of past experience, renewed efforts open fresh sources of information; and thus, by a gradual progression in science, successive discoveries ultimately lead us to a perfect acquaintance with the object of our inquiry.

In common with his contemporaries in the profession, the author of this treatise has beheld, with pain, the destruction occasioned by the glanders; a disorder, the more to be dreaded, not only because it has hitherto proved incurable, but from its being, at the same time, highly contagious. He has had frequent opportunities of witnessing the fatal effects of the disease in the army, among waggon and post horses, and in private stables. In the course of fifteen years' prac-

tice, he has given this subject a large portion of his attention, and has suffered no opportunity to pass him unimproved. The result of his labours is now presented to the public.

It was formerly a received opinion, and is a notion which, in some instances, now prevails, that the glanders are a local disease. With reference to this idea, the author of this work has made numerous experiments, in order to examine into its truth; and has now published the result of those attempts, which, he thinks, will corroborate the opinion he has formed, that the discharge from the nostril does not arise from a local cause, but is symptomatic of a constitutional affection.

The public, it is conceived, will be much interested in the conclusions to be drawn from one of the experiments related in the pursuit of this inquiry: it

is believed, that it will, for the most part, afford a certain test for ascertaining the nature of a discharge of matter from the nostrils, and proving, beyond a doubt, whether it is the effect of glanders, or some other complaint, the symptoms of which resemble that disease. The test, to which this allusion is made, simply consists in the inoculation of a sound horse or ass with the suspected matter: if it is really glanderous, infection will be the consequence; which cannot be the case, if the discharge proceeds from some other cause than the glanders. This has been proved by experiment; and is, perhaps, the only certain method of dispelling any doubt that may exist in these obscure cases, the nature of which cannot be otherwise determined.

The knowledge of the nature and origin of glanders has been so confined, that various conjectures have been en-

tertained of the mode in which the disease is generated. Amid this obscurity, some have thought, that it has been caused by a noxious vapour, arising from the glanderous matter; others have entertained the opinion, that the nostril, coming into contact with the matter, has produced the infection. The author has given a course of experiments on these heads, together with his reason for believing that the propagation of glanders is principally owing to contagion; not by the application of matter to the nostrils, but by its being swallowed, either with the water or food.

In speaking of the nature and causes of farcy, it was not thought necessary to be so minute as in the preceding chapter. Experiments have proved, that these two diseases bear a very near relation to each other; and it is found, that they are so closely connected, that

one complaint will frequently produce the other. When farcy makes its appearance, it is usually the precursor of glanders; and is, in fact, most commonly generated by the identical complaint, which it ultimately thus produces. The alliance between these two complaints is such, that the notice of one of them, almost of necessity, involves the other; but there are certain circumstances, which render it more advisable to treat of them under distinct heads, in order to convey a more exact idea of each; and this is the plan that has been pursued in the present instance. The numerous attempts that have been made to cure the glanders, evince, in a high degree, the importance veterinary professors have attached to the discovery of a remedy for this malignant and destructive complaint. Although their unremitting endeavours have hitherto been frustrated,

it is hoped, that a brief narrative of some of the means that have been employed will not be unacceptable, as it may contribute to a more clear illustration of the disease.

On the first projection of this publication, it was intended to confine the matter to the notice of glanders and farcy; but subsequent reflection held forth an inducement to annex a few remarks on the nature and cause of staggers; because they are a complaint, the origin of which seems, in general, to be but little understood. In adverting to this subject, the author cannot forego the satisfaction of publicly acknowledging his obligations to a certain gentleman for much valuable information on this important subject; by whose permission, he has added to the work a letter, which he had the honour of receiving from him, on

the probable causes, the nature, symptoms, and the dreadful effects of that disorder in the neighbourhood of Swansea. The observations comprised in the letter bear evident marks of minute and attentive investigation, and, without doubt, will be perused with corresponding interest.

With respect to the style of the performance in general, it may not be improper to observe, that, in treating on the several subjects, it has been the endeavour of the author to explain them with brevity, and, at the same time, to render them intelligible to his readers. It has been his wish to avoid swelling the bulk of his work beyond what was necessary; and, with this view, he has attempted to compress the matter into as small a compass as was thought to be consistent with a proper understanding of the information he

wished to convey. A succinct but clear account of the diseases under consideration has been the main object of the undertaking. How far success has attended the attempt, must be left to the candid judgment of a discerning public.

A question may probably arise, as to the motives or the utility of publishing a book on diseases that are professedly incurable. It may be answered, that, although so much is not effected as might be desired, yet some essential benefit may accrue to society from an experimental account of the analysis of disorders, the nature of which is not generally known; and that the intent of the following pages does not presume to supersede the information of scientific men, but rather directs its instructions to those more numerous classes of society, who are deprived of the opportunities of acquiring such know-

ledge. If the matter, with men of science, be denied the merit of much originality, it may, however, promote the beneficial purpose of stimulating them to farther investigations, and thereby produce some valuable improvements in the manner of treating these obstinate diseases. The attainment of these objects will complete the wishes and expectations of the author; and, if he should fortunately prove a remote instrument in advancing this desirable object, he hopes that he shall not be censured with a misapplication of time, in committing his present labours to the consideration of the public.

When this book was ready for the press, it was suggested to the author, that its value would be increased by adding instructions for the treatment of inflammation of the lungs and bowels, and for the prevention and treatment of lame-

ness. Although these subjects have been treated of in the first volume, subsequent experience has enabled him to offer some farther observations, which, he trusts, will not be deemed unworthy of public attention.

*The following Works, by* MR. WHITE, *may be had of the Publishers of this Volume.*

1. A TREATISE ON VETERINARY MEDICINE. Vol. I: containing a Compendium of the Veterinary Art; or, an accurate Description of the Diseases of the Horse, and their Mode of Treatment; the Anatomy and Physiology of the Foot; and the Principles and Practice of Shoeing. Illustrated by Plates. With Observations on Stable Management, Feeding, Exercise, and Condition. Dedicated, by Permission, to his Royal Highness the Duke of York. The Eleventh Edition, considerably enlarged, *price 7s. boards.*

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A

# TREATISE

ON

# VETERINARY MEDICINE.

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## CHAPTER I.

### *A Description of Glanders.*

THE nature and consequences of this malignant disease cannot be too seriously considered by all those who have the management of horses. It is the interest of proprietors, no less than the duty of servants, to acquire a knowledge of its earliest symptoms; and to attend carefully to the instructions, that are offered with a view to prevent the spreading of a complaint, which, in its nature, is contagious, and has hitherto, I believe, proved incurable; though a few instances have occurred of a spontaneous or natural cure.

The first symptoms of glanders are, a discharge of matter from one or both nostrils, and a swelling of the glands, or *kernels*, as they are commonly

termed, between the branches of the lower jaw-bone. When the discharge of matter is from one nostril only, the swelling is generally confined to that side of the jaw-bone: this is a very common case in the early stage of the complaint.

In the mild kind of glanders, the matter is small in quantity, and of a thin, glutinous appearance, adhering to the exterior part of the nostril, or upper lip; the general health is seldom affected, the horse appearing perfectly well in every other respect. On examining the interior or red part of the nostril, in this stage of the complaint, ulcers are rarely observable, and the matter is free from odour; this, indeed, is often the case after the disease has existed several months: yet it has been thought, that an offensive smell constituted one distinguishing mark of glanders.

The disease, sometimes, continues in this mild stage several months; and, in a few instances, even for years: when this happens, it is generally found that the horse is of a hardy constitution, is in good condition when attacked by it, and afterwards is treated with proper care. But when the disorder attacks horses that are worked hard and inadequately fed, or such as are of delicate constitutions; its progress is usually more rapid, and the second stage soon commences.

This is distinguished by a more copious discharge, often attended with ulceration in the interior parts of the nostrils. When the discharge is at all tinged with red, or mixed with streaks of blood, it is a certain proof of the existence of ulceration; though perhaps not low enough to be discovered: and, if the matter smell offensively, it is probable, that not only the red membrane, but also the cartilage and bones are diseased. In this stage, the matter often proceeds from both nostrils, and the glands under the jaw are considerably enlarged. When the glanders arrive at the second stage, the strength of the horse undergoes a more or less rapid decline: the accumulation of matter, together with the thickened and ulcerated state of the parts within the nostril, in some degree obstructs respiration, and causes a snuffling noise in breathing, which may be often heard at the distance of several yards. On the occurrence of these symptoms, the lungs are always affected with tubercles, or abscesses; and the animal soon falls a victim to the disease.

The glanders, sometimes, attack with great violence; beginning with a copious discharge of matter from the nostrils, and ulceration of the membrane within them. In such cases, the horse

soon becomes weak and emaciated, and in a short time sinks under the complaint.

I have met with many instances, in which glanders were preceded by general indisposition. The horse appeared weak and languid, and fed badly; proceeding at times in this way for two or three weeks, with a gradual loss of strength and flesh. At length, the symptoms which are supposed to constitute glanders made their appearance; that is to say, there was a discharge of matter from the nostrils, and the glands under the jaw became enlarged.

In cases of this nature, it is commonly thought that the glanders are generated; or that the disease is a consequence of the general debility under which the animal labours: but I think it far more probable, that it is the effect of contagion.

A swelling of the gland under the jaw is sometimes observed, without any discharge from the nostrils. In such instances, we generally find, that at some former period the horse has had the farcy, or has been kept with glandered horses; and, on a careful inspection, a slight degree of moisture is usually perceived in the nostril, which is on the same side as the swelling; or an appear-

ance, as though the more fluid parts of the discharge had evaporated, leaving a dirty coloured coating upon the parts. But if this symptom be not visible, we may learn from the person who has attended or worked the horse, that such an appearance has at times been observed, or that the horse has occasionally thrown out matter in snorting. This circumstance, therefore, is sufficient to excite suspicion, however trifling the swelling and discharge may be; especially when it is known, that the horse has had the farcy at any former period, or has ever been exposed to infection.

It is astonishing in how slight a degree the glanders sometimes exist in horses of strong constitutions, that are fed well and moderately worked. Such instances often occur among our cavalry; where, upon the slightest cause for suspicion, the horse is (generally) separated from the rest, and not employed in any duty; though the allowance of forage issued for him is the same as though he were regularly worked.

It sometimes happens, that the discharge from the nostril ceases for a time; but the swelling of the glands under the jaw generally remains, the discharge sooner or later returns, and the disease ultimately proves fatal.

The following case, sent to me by a gentleman

who keeps a great number of horses, will serve as an example of this: "Upon examining our horses, I found one with a suspicious running: I had him immediately separated; in the course of a few days the running ceased; and, as the horse appeared perfectly well, he was returned to the working stable. In about a fortnight, I found a large swelling, where it usually is in glanders, but no running at the nose; the swelling was frequently bathed with salt water without effect, but the horse continued without any running at the nose for months. A decisive glanderous running then came on suddenly, and the horse was destroyed."

## CHAPTER II.

### *A Description of Farcy.*

It has been clearly ascertained, as will be shown hereafter, that the glanders and farcy will mutually produce each other, and are therefore nearly allied; yet there are circumstances, which make it appear necessary to give them a separate consideration.

The farcy, generally, appears in the form of small tumours, called *buds* by farriers; or small ulcers, about the legs; sometimes on the lips, face, neck, or other parts of the body. These tumours are, in some cases, so small, so few in number, and create so little inconvenience to the animal, that, for a time, they escape observation; at other times, they are larger, more numerous, painful to the touch, and spread more rapidly; and, in these instances, a general swelling of the limb often takes place, particularly when the hind legs are attacked, and some degree of lameness ensues.

The tumours, or *buds*, are at first hard, but

soon become soft, and burst; degenerating into foul ulcers, of a peculiar appearance.

It is worthy of remark, that this disease always proceeds upwards, if in the limbs; if in the neck, it advances towards the chest; if in the lips or nose, it spreads towards the glands under the jaw; in short, its invariable direction is to the heart: often in its course affecting the superficial glands, and causing them to swell, in like manner as the venereal poison, from a chancre, affects the glands of the groin, and causes buboes.

The lines of communication between the *buds*, or ulcers, are, generally, very observable; particularly when they occur on the inside of the limbs, where the superficial veins are large; as in the thigh: they consist of what the farriers call *corded veins*, but, in reality, are inflamed and enlarged lymphatic or absorbent vessels; which vessels very closely accompany the superficial veins, and are in bulk proportioned to the size of the vein.

When the farcy *bud* has suppurated and burst, it sometimes spreads under the skin, forming what are termed sinuses, or pipes; and when this happens on the hock joint, or on the flexor tendons of the legs, it generally causes considerable lameness, and is difficult of cure. When no remedies are applied to a farcy ulcer, it commonly spreads

more or less rapidly; but, by the free application of caustics, assisted by internal remedies, and by laying open the sinuses when they exist, the sores gradually heal, and the horse is apparently cured. In slight cases, this apparent cure is effected by caustics alone, and occasional blisters. It is, however, generally found, that this disease, though it seems to have been perfectly removed, is followed by the glanders; the interval being sometimes considerable, varying from two or three weeks to several months. (See chapter x, experiments 9, 10, and 12.)

When the farcy attacks extensively, it is usually accompanied, or very quickly followed, by glanders.

The commencement of farcy is sometimes more violent than has yet been described. The limbs swell to an enormous size; foul ulcers appear in various parts; the nose swells, and discharges fœtid matter; and the horse breathes with difficulty, from the swelling and ulceration of the nostrils. This malignant kind of farcy is not very common, and occurs to post and stage-coach horses, more frequently than to such as are worked moderately. When it does happen, however, it speedily destroys the animal.

When a farcy *bud* has burst, and become an ulcer, there is something peculiar and character-

istic in its appearance. The edges of the skin that surround the ulcer terminate abruptly, and the surface of the sore has a pale, glossy appearance. If a caustic be freely applied, so as to destroy the diseased parts, the sore loses this peculiar appearance as soon as the slough separates: the skin, instead of terminating abruptly, is gradually lost in the sore; which looks red and healthy, and very soon heals, though no other remedies are applied.

The farcy sometimes attacks horses that are in good condition, and without any previous illness; most commonly, however, it is preceded by various symptoms of constitutional derangement. In some cases, the horse gradually loses flesh and strength; the coat becomes dry; the skin tight; and the hind legs swell: in other instances, the horse has been suddenly attacked with lameness, without any visible cause, when, after a few days, the appearance of farcy *buds* has pointed out the nature of the disease.

## CHAPTER III.

*A Description of those Diseases which may be mistaken for Glanders, and the Method of distinguishing them.*

THE symptoms of glanders have been frequently confounded with those of some other complaints, nearly resembling them; but which, in fact, are essentially different in their origin and nature. The diseases liable to be mistaken for glanders are the *strangles*; *catarrh*, or cold; inflammation of the throat, with discharge from the nostrils, commonly termed *quinsy*, or sore throat; chronic inflammation of the membrane within the nostril, causing a slight discharge, and a trifling enlargement of the glands under the jaw; a discharge of stinking matter, in consequence of a fracture of the bones of the nose; epidemic *catarrh*, commonly called the *distemper*; and diseased mesenteric glands, accompanied by a discharge from the nostrils and a gradual loss of flesh.

The strangles are a disease, which usually occurs to young horses, and in some respects resembles

the glanders; that is, there is generally a discharge of matter from the nostrils, and the glands under the jaw are swollen. There is no difficulty, however, in distinguishing this disease, as it is commonly attended by cough, and some degree of fever; the eyes appear dull, or inflamed and watery; the appetite is affected, and there is often difficulty in swallowing; the tumour under the jaw becomes tender, gradually increases, and at length bursts, discharging a considerable quantity of white matter. After this, the horse becomes lively, feeds well, and all the symptoms, under proper management, gradually disappear. With this description of strangles, it is unnecessary to show, in a more particular manner, how they are to be known from glanders. It is proper, however, to observe, that, in a few instances, the discharge of matter from the nostrils has been known to continue after the other symptoms had ceased: this, perhaps, has given rise to an opinion, that sometimes, through neglect or bad management, the strangles have degenerated into glanders. I have never seen an instance of glanders being so produced; and whenever the discharge from the strangles has continued after the other symptoms have been removed, I have already observed, that it ceases in time, and the horse perfectly recovers. In treating of the

nature and cause of glanders, this subject will be more particularly considered.

A copious discharge of matter sometimes takes place from the nose of a horse, in consequence of inflammation of the throat and higher parts of the nostrils. This complaint is termed *quinsy*, or sore throat, and, by some, the inward strangles: here there is pain and difficulty in swallowing, which symptom generally precedes the discharge a short time; an unusual quantity of saliva is often formed; and sometimes the disorder is attended by fever; but the glands under the jaw are seldom affected. In this case, there can be no difficulty in distinguishing the disorder from glanders.

The next disease to be described has often puzzled the most experienced practitioners; it consists in slow or chronic inflammation of the membrane within the nostrils, accompanied by a discharge of matter, and a trifling enlargement of the glands under the jaw.

It is necessary here to remark, that, over the whole surface of the delicate membrane which lines the interior of the nostrils, a mucous fluid is constantly forming by vessels destined for this purpose, in order to lubricate it, and preserve it in a state of moisture. These vessels may be affected by various causes, so as to form more of this fluid

than usual, and of a different quality and appearance: it will then be seen flowing from the nostrils. The causes which produce this state of the membrane are various. If, for example, a stimulating fluid of sufficient strength were injected into the nostrils, it would excite inflammation, and produce a discharge. The same effect is brought on by what is termed catching cold; it also happens in strangles, as has been described; in glanders, likewise, the most conspicuous symptom is a discharge from the nostrils, occasioned by a peculiar kind of poison having got into the circulation. But the cause of the discharge now under consideration cannot be ascertained; it so nearly resembles that which occurs in the mild kind of glanders, that, by merely examining the parts, it is extremely difficult, if not impossible, to fix the distinction between them. I can point out only one method, by which this appearance may be known with certainty from the mild glanders; and this will be explained in the seventh chapter.

In describing the glanders, it was observed, that the progress of the disease was more rapid in horses that were weak and in low condition, than in such as were healthy and strong. In these doubtful cases, it may be worth while to try the effect of copious bleeding and low diet, in order to reduce

the strength of the animal: if the disease were really the glanders, this would, perhaps, so increase it, as to remove all doubt respecting its nature; whereas, if it arose from any other cause, by such means it probably would be removed.

When a discharge takes place from the nostrils in consequence of catching cold, there is seldom any swelling of the glands under the jaw; and, when this symptom does occur, the swelling is generally tender, and either suppurates, or gradually subsides. There is also a cough, and the eyes are frequently affected; the discharge proceeds from both nostrils; the matter is commonly thicker than in cases of glanders, and of a whitish colour, like that from a common abscess.

In the epidemic catarrh, or distemper, which raged with great violence in the summer of 1798, many instances occurred, which were supposed to degenerate into glanders: in some of these, ulceration took place within the nostrils; and several horses were destroyed under a conviction of their being glandered. I am inclined to believe, that such cases were not glanderous; though, it is probable, that in some of them, the lungs were incurably diseased. Those that came under my observation differed materially from glanders: when the discharge came from the lungs, as well as the

nostrils, it was known by a weak rattling cough, and offensive breath: there was seldom any swelling under the jaw, and the horse was extremely weak and emaciated. When these symptoms occurred, the horse soon died. If the distemper was followed by a discharge from the nostrils, unattended by cough, the matter was generally very abundant, and flowed equally from both nostrils; the glands under the jaw were seldom enlarged. But the most material difference between this disease and glanders consisted in its not being infectious; that is, so far as my experience enabled me to judge. This subject will be more particularly discussed in the sixth chapter.

A discharge of fœtid matter sometimes takes place from the nostrils in consequence of a blow, by which the bone has been fractured; and is generally accompanied by a swelling of the gland under the jaw. I have seen two instances of this kind, in which the symptoms had existed a considerable time; and so nearly resembled glanders, that many experienced persons were deceived. But the disease was clearly proved to be of a different nature, from the circumstance of the horses being constantly kept with others, without producing any infection.

Mr. Peale, in his Veterinary Observations, men-

tions a case of glanders, as he considered it, produced in this way; but he does not give any description of the symptoms, nor does he say whether the disease was communicated or not to another horse: had he inoculated an ass with a small quantity of the matter, the nature of the disease might have been easily determined, as will be shown in the seventh chapter. On this case Mr. Peale makes the following remark: "Now though it is impossible to say how long a time may have elapsed before the disease (glanders) would have manifested itself, in case no wound had been inflicted on the nose; yet I have no hesitation in pronouncing positively, that in this instance the wound did not produce the glanders, though it most unquestionably hurried on the attack." After this positive declaration, Mr. Peale is reduced to the dilemma (I think) of acknowledging, that his opinion of this case can only be supported by having recourse to the common notion of the complaint's lurking in the blood, or constitution, for a time, without any symptom of the disease appearing in the animal. As Mr. Peale is so positive in the opinion he has given of this case, I think he should have furnished us with the grounds upon which it is founded: as it now stands, it appears to be a mere conjecture; and if he knows no more of the

case than he has related, it seems more probable to me, that the horse was not glandered; though I dare say there was an offensive discharge from the nose, swelling of the glands, and, perhaps, ulceration within the nostril also.

## CHAPTER IV.

*A Description of those Diseases which resemble Farcy, and how they may be distinguished from it.*

In regard to the symptoms of farcy, a liability to error in judgment prevails, as in the case of glanders just described: but the difference between farcy and the diseases that may sometimes be mistaken for it, is readily distinguished.

Horses are often attacked with diffused swellings of the limbs, belly, or sheath; and particularly of the hind legs. These swellings are sometimes considerable, highly inflamed, and painful, and occasion lameness. If the finger be strongly pressed on the swollen part, after the inflammation and tenderness have abated, the impression will be found to remain some time. Ulcers, also, will occasionally break out about the limbs; but a greater or less degree of fever and loss of appetite generally accompanies the first attack. In some cases, the swelling is preceded by shivering and other symptoms of fever. These symptoms are, by farriers, termed farcy.

This disease, however, differs from farcy in many respects. When ulcers appear on the swollen parts, which is by no means a frequent occurrence, they do not spread like those of farcy; nor is there between them that line of communication we have described: that is, there are no enlarged lymphatics, or corded veins, as they are termed by farriers. The swelling and lameness are more considerable than in farcy; except in those violent cases, which are accompanied, or soon followed, by glanders. In fact, this spurious kind of farcy is nothing more than a common watery swelling, arising from some temporary derangement of the constitution; often following a smart attack of fever, and causing an abatement of the febrile symptoms. This disease is easily cured by bleeding, with cooling and diuretic medicines.

Another complaint, which appears on the skin, has sometimes been mistaken for farcy: in this case, small tumours arise in various parts of the body; bearing some resemblance to those of farcy, but differing from them in being smaller, not painful, and seldom suppurating or forming matter; nor do we ever observe, in this case, any enlarged lymphatics.

## CHAPTER V.

### *On the Nature and Cause of Glanders.*

THE glanders appear to be a constitutional disease, caused by a peculiar kind of poison, with which the whole mass of blood is impregnated.

Under such circumstances, that certain parts only should be infected, may appear extraordinary to those that are not of the medical profession: but when it is considered, that, in smallpox, the blood is contaminated with the variolous poison, and that the skin only is affected; and again, that many parts of the body are never attacked by the venereal virus; I conceive, that there can be no difficulty in assenting to my position.

That the blood is impregnated with the poison of glanders, seems to have been proved by an experiment made by Mr. Coleman. He introduced the blood of a glandered horse into the jugular vein of a healthy ass: in a short time the ass became completely glandered.

The following experiment will serve also to illustrate this; and may also afford a proof of what

has been asserted; that is, that the glanders, when they attack the nostrils, are not a local disease, but a symptom of constitutional affection.

### EXPERIMENT I.

Let the hair be cut from any part of the body, the neck for example, about an inch square, and a lancet passed under the cuticle or scarf skin, so that it may be slightly tinged with blood, without causing any to flow from the part; when this happens, the bleeding should be stopped by pressing on the wound previous to proceeding in the experiment: under the cuticle, which has been thus raised, let a small quantity of matter from the nose of a glandered horse be introduced, by means of a small bit of wood or ivory. The following day, the part will appear a little swollen and tender; and, on the second or third day, matter may be seen oozing from it: soon after, the absorbent or lymphatic vessels going from the part will swell, appearing like *corded veins*, as they are termed, as in cases of farcy. On rubbing off the crust on the surface of the sore, there will be found an ulcer, or chancre, of a peculiar appearance; the edges will look smooth and regular, terminating abruptly, and the surface smooth and glossy, free from that red, granulating appearance, observable

in a common sore. In the course of the corded lymphatics, other tumours will be seen, soon bursting, and assuming the appearance of the original sore; which continues to spread, sometimes rapidly. At length, a discharge takes place from one or both nostrils, and the glands under the jaw become enlarged: in a word, the horse will be completely glandered. It may be proper to add, that the same effect has been produced by matter taken from a farcy bud.

The degree and progress of the glanders, thus artificially produced, appear to be chiefly regulated by the following circumstances:—the state or condition of the animal; the quantity of glanderous matter used in the inoculation; and the extent or depth of the wound or orifice in which it has been placed.

If, for example, the experiment be performed in the way I have described, and the horse be in good condition, and kept well afterwards, perhaps several weeks may elapse before the nose is affected: but if the animal be weak and emaciated, and afterwards badly fed, the disease will be more rapid in its progress. If the orifice be large, and a considerable quantity of matter introduced, the

horse would not only have the glanders in a short time, but it is probable, that the hind legs, or other parts of the body, would be affected also with farcy. (See chapter x, experiment 13.) I have seen two horses speedily destroyed this way: one of them was extremely thin and feeble, and the quantity of matter not very great; but the orifice in the latter was large, like that made for a rowel, and in it a piece of tow, soaked in glanderous matter, was placed. It does not appear, that the degree of the disease, produced by inoculation, is at all influenced by the state of the matter employed; for that of the mild kind of glanders has been found to have precisely the same effect as matter from the most virulent.

It will be urged, perhaps, in opposition to the opinion here given, of the glanders being a constitutional complaint; that, as the disease often attacks only one nostril, and is produced by standing near a glandered horse, it seems rather to be caused by the immediate application of glanderous matter to the nostril, and is, consequently, in the first instance, a local complaint. This opinion is certainly very plausible; but the following experiments, I think, will convince every one that it is erroneous.

EXPERIMENT II.

A considerable quantity of matter was taken from a horse decidedly glandered. This was applied, by means of a long probe and a piece of lint, to the nostril of a sound horse, and kept in contact with the membrane a few minutes. Glanderous matter was next injected into the nostril; and, though this was repeated for three successive days, not the slightest effect could be perceived. About a fortnight after this experiment, the horse was inoculated with some of the same matter, with a view to prove, that it was really glanderous, and that the subject of the experiment was susceptible of the disease. It produced a chancre, as in experiment 1, which was soon followed by glanders. This was thought necessary, to render the experiment decisive, because it has been found, in a few instances, that horses have been so hardy as to resist the contagion, having been worked and fed with glandered horses without catching the disease.

This experiment was tried on foru other horses, and with the same result, except in one case, in which the matter was injudiciously applied by means of rough brown paper, and the membrane accidentally wounded.

In this case, a small reddish pustule arose within the nostril, which became a chancre; in short, the sore was exactly like those produced by inoculation in other parts of the body, and the disease did not, in any respect, resemble glanders. Had it been convenient to keep this horse a sufficient time, I have no doubt the usual symptoms of glanders would have appeared; but at this period he was destroyed*.

Since, then, it seems that the disease is not produced by applying glanderous matter to the nostrils, it may be supposed, that it is caused by some vapour, which arises from the matter, and consequently, that even the air of a stable, in which glandered horses are kept, is infectious. It has been proved, however, by experiment, that this opinion is erroneous.

### EXPERIMENT III.

A slight division was made in a stable: in one part, two glandered horses were kept; the other was used for horses that happened to be lame or sick, or from any other cause unfit for work. There was a free communication for the air, the partition

* Mr. Rogers, an ingenious veterinarian of Exeter, has applied glanderous matter to the nose of an ass very freely without producing the slightest effect.

being constructed with thin planks, and some space left between each: it was carried only so high as to prevent the horses from touching each other. No instance ever occurred here of a horse catching the glanders, though many horses were so exposed, and different glandered horses were kept in the other part of the stable, some of which had the disease in a very high degree.

It appears to me, that glanders are communicated by the matter being taken into the mouth or stomach, either with the food or water, or by licking it from the rack or manger. This opinion, however, has not been clearly proved by experiment*. It has been suggested, that the matter being taken into the mouth, may be partially absorbed, so as to affect the constitution: or that it may affect the back part of the throat, and thence spread to the nostril. In one case, where glanderous matter was given to a horse for three days, a tumour soon after appeared in the hock, resembling farcy, and the nose was slightly affected: but

* I was not aware, when the second edition was published, of the result of Mr. St. Bel's experiments on this point. "The virus (glanderous matter) was mixed with flour, and given to three horses for the space of a week; the disease was communicated to the youngest horse in a month; the two others sickened some time after."

the horse was destroyed as soon as these symptoms appeared, being incurably lame, and having no convenient place for keeping him. Yet I feel convinced that the horse was really glandered.

In another instance, glanderous matter was given to a young ass, in daily doses, of about two or three drams, for more than a week: soon after, the animal died without any appearance of glanders or farcy. In a third experiment, two doses were given; and, in a fourth, one dose without any effect.

Though glanders have been thus produced in one instance only, in my experiments, and then not in a degree sufficiently decisive to preclude all doubt as to the nature of the disease, yet the indirect proofs in favour of this opinion are certainly very strong; and it is farther corroborated, by the well-known fact, that horses have frequently been infected, by standing in a stable where glandered horses had been previously kept, though the diseased horse had been removed several days; and, consequently, the infectious matter he had left must have become dry, and be adhering to the manger, rack, or to any hay, corn, or straw, that may happen to be in the stable. In this state, it is difficult to conceive how it could be applied to the interior parts of the nostril; but we can readily imagine,

that the infectious matter may, under such circumstances, be taken into the stomach. It is well known, also, that horses have been infected by drinking out of a pail, or trough, that had previously been used for glandered horses.

The following circumstance affords an example of this:—A team of glandered horses stopped occasionally on a gentleman's premises, to take up goods: during the time of loading, they were fed with hay, which was thrown upon the ground. More or less of this hay was generally left; and, as the place communicated with a paddock, in which a horse and two colts were kept, the hay that remained was generally eaten by them. The horse, after some time, became so decidedly glanderous, that it was thought necessary to destroy him. The two colts, a short time after, appeared to have the disease; but in so slight a degree, that it was thought doubtful: they have now been in the same state about two months, from the time I saw them; and though the disease has not increased, and the discharge is scarcely perceptible, I have no doubt that it will ultimately prove to be the glanders. The continuance of the symptoms, for so long a time, is a circumstance that adds considerable strength to this opinion.

A general opinion prevails, I believe, among

veterinary surgeons, as well as others concerned with horses, that the glanders are sometimes generated in the system, by other causes than contagion. That the disease is sometimes so produced, cannot, perhaps, be disputed; yet, from the observations I have made, it appears to me probable, that it more frequently arises from contagion.

It should be recollected, that there are circumstances which seem to prove, that the glanderous poison may remain in the system for some time, without producing the characteristic symptoms of the disease. In what other manner can we account for the farcy being so frequently followed by glanders, as experience proves to be the case, after that disease has been apparently cured for several weeks, or even months? though the horse, in the interval, appears perfectly free from every symptom of glanders. When, therefore, a horse becomes glandered, we ought not to conclude, that the disease has been generated independently of contagion, because he has not, within a short period, been exposed to infection.

I have had an opportunity of seeing sound horses worked and kept with glandered horses, and have uniformly found, that they have not been immediately infected: it has sometimes been one, two, or three months before the glanders have appeared;

and, in a few instances, they have escaped it altogether. In an experiment related by St. Bel, three months elapsed before a horse was infected, though he was constantly fed and watered with one that was glandered. If, in a regiment of cavalry, a horse becomes glandered, and the disorder is not at first observed, so that he is suffered to remain in the stable a few days with others, the mischief he does is not immediately perceived. It has often happened, that the horses infected by him have not shown the disease till several weeks after he has been separated from them; and suppose three horses to have been infected, the disease will generally appear in each at different periods; sometimes with considerable variation in respect of time. Similar instances have come under my observation among waggon-horses.

In such cases, where the persons concerned think little of the contagious nature of the disease, supposing it to proceed from other causes, it has often continued among their horses a great length of time; seldom, however, attacking in a violent form, and often remaining in a mild stage for a considerable period. Occasionally, it exists in so slight a degree, that the proprietor does not think it necessary to separate the horse; so that he is kept in the same stable, and fed and watered with the others.

It is by such proceeding, that the glanders are frequently kept up among cavalry and waggon horses: the disorder is, sometimes, propagated so slowly, that all sight of contagion is lost, and the complaint is attributed to other causes. What I have said, is not a matter of conjecture; it is the result of careful observation.

In a troop of cavalry, at the Honiton barracks in Devonshire, a horse was found to have the glanders: in the course of about two months, two or three others of the same troop, that had been kept in the same stable, became glandered, but at different times. Though the first horse was separated as soon as the disorder was perceived, it is probable, that there had been some running from the nose several days or weeks before it was observed; but the horses were afterwards more carefully examined, and the disease, perhaps, discovered at its commencement.

It is of the highest moment, that the proprietors of horses should be aware of this circumstance, that they may be convinced of the necessity of separating a glandered horse from others, in however mild a degree the disease may make its appearance.

When the disease is propagated thus slowly, among cavalry, or waggon-horses, it appears to depend upon two circumstances: in the first place,

the horses, on such occasions, are, in general, healthy, and in good condition; consequently, less susceptible of the disease; and, when attacked by it, contract only a slight infection: secondly, the quantity of poisonous matter produced is, under such circumstances, usually inconsiderable, because the disease exists in its mildest form; and when the quantity is at all considerable, the infected horse is immediately removed from the healthy stable. But, when the glanders are introduced among post or stage-coach horses, it spreads rapidly; generally appears in the most virulent form; is often accompanied by farcy; and proves extremely destructive.

Nothing is so favourable to the progress of the disease, as that debility, or state of the constitution, which is brought on by excessive exertion, bad provender, or an insufficient quantity of good food, and hot, close stables; particularly when horses are put into such stables after long exposure to moisture and cold. These are circumstances no less deserving the attention of the proprietors of horses, than those before mentioned; for, if it be true, that the glanders sometimes take place independently of contagion, these are, undoubtedly, the causes by which they are generated.

It seems to be generally believed, that the stran-

gles, or a violent cold, when neglected, will sometimes degenerate into glanders. I have never seen an instance of this, and am persuaded the opinion is erroneous. I have often seen cases, both of catarrh, or cold, and strangles, where the discharge has continued an unusual length of time, and the horse has been thought glandered; but I have uniformly found, that such horses have either perfectly recovered, or died from the disease having extended to the lungs.

A discharge of stinking matter, from one or both nostrils, is sometimes caused by a blow, by which the bone is fractured: this, being generally attended by a swelling of the glands, and often continuing a considerable time, has been supposed to degenerate into glanders. This circumstance, indeed, was noticed by Lafosse, the author of a book on Glanders; who also observed, that the disease may be produced by injecting any stimulating fluid into the nostrils. It appears, in short, that every discharge, which continued an unusual length of time, has been considered glanderous; hence we may account for the supposed cures that have been effected, as well as some of those that have been said to take place spontaneously; and, from the same error, a great number of horses have, no doubt, been unnecessarily destroyed.

Mr. St. Bel, in an account of his experiments on glanders, has given the following statement. "Two sound horses, the one fresh from grass, aged six years, and the other nine years, just come from work, were placed by a horse that had the glanders, drinking out of the same pail, and eating from the same manger. The first showed evident signs of glanders at the expiration of thirty-four days. It fully declared itself in the second, at the end of six weeks." 2nd. Expt. "Two healthy horses, the one seven, the other eleven years old, both just taken from work, were placed by a horse that had the glanders; the former caught the disease in fifty-two days, the other in three months." Five other experiments are described. In the first, a horse drank out of the same pail, and of the same water, with a horse that had the glanders, for two months, but was not fed or kept with him without being infected. In the next, a horse nine years old, in tolerable condition, caught the disease in forty-three days, by standing next a horse in the last stage of glanders. In the third experiment, three old horses were inoculated with glanders, and did not catch the disease. In the fourth experiment, the saddles and coverings that had been used to glandered horses, were placed on several others in good health, for the space of a month, during sum-

mer, and did not convey the infection. The other experiment has already been noticed. See note, page 27.

I should not have adduced Mr. St. Bel's experiments as an additional proof of the contagious nature of glanders, and of their not taking place immediately after a horse has been exposed to the contagion, as it is already generally known by those concerned with horses, and has been most amply and incontrovertibly proved: but in a Treatise on Glanders lately published, an opinion seems to prevail with the author (Mr. Smith), of glanders being rarely, if ever, communicated by contagion. He does not, it is true, positively assert that they cannot be so communicated; but certainly takes great pains to persuade his readers, that the disease never is, and that the common opinion of its being incurable and contagious is nothing more than a "vulgar error." We are informed in the preface, that at a very early period of his life, he was taught to believe, that the glanders are highly infectious; and holding his preceptor in great estimation, he received his opinions on this subject with implicit confidence, without doubt of their being the result of experience, and built on the firmest foundation of truth: they were therefore held by him, with tenacity, for a series of years. Having applied

himself, however, to the study of the disease with increased assiduity, he found himself compelled to give up his preconceived ideas concerning its origin and embrace those contained in his treatise.

Mr. Smith does not name this preceptor, who, at a very early period of his life, instilled into his youthful mind those erroneous notions and vulgar errors, as he seems to consider them, respecting the nature of glanders. He surely cannot mean the professor, Mr. Coleman: he has always taught, that glanders are a contagious disease, and often generated in the system by other causes; and that they cannot be communicated to a healthy horse, through the medium of the air, by invisible vapours issuing from a glandered subject. And besides, the opinions upon which the author opens his formidable attack were never held by Mr. Coleman, or any veterinary writer in this country, that I can discover*. The first is, that the spinal marrow is the seat of glanders; and the second, that they may be communicated through the air at a distance of twenty miles.

The earliest writer I can meet with, old Gervase Markham, who wrote about the year 1660, did not hold such opinions. He says, "Now for

* I believe such opinions may be found in a French work, written in an early part of the last century, by M. Saunier.

the glanders, you shall understand that it is a running imposthume, engendered either by cold, or by famine, or by long thirst, or by eating corrupted and musty food, or by being kept in unsavoury places, or is taken by standing with infected horses. 'Tis a gathering together of moist and corrupt humours which run at the nose."

Gibson, a very respectable author of the last century, merely notices such an opinion; and observes, that, "when horses have been long glandered, the bones and gristles become foul; the matter then turns to a blackish colour, and becomes very fœtid and stinking: and this is what commonly passes for a mourning of the chine, from a mistaken notion of corruption and putrefaction of the brain and spinal marrow."

"The glanders (according to Gibson) may, sometimes, proceed from colds ill cured in horses that are naturally of a weak consumptive habit," &c. Again: "The glanders is looked upon as the most infectious of all other maladies that can happen to a horse, and it is certainly so at some seasons more than others; I have known, however, glandered horses, that were never cured, stand a considerable time along with sound horses, through negligence or ignorance of the distemper, thinking it only to be an inveterate cold, and yet no harm happen.

On the other hand, I have known a glandered horse infect every one that has stood near him, in the same stable." We have not a word here about the twenty miles, and only a slight notice, of what he considered the old and mistaken notion, of the spinal marrow being affected in glanders.

Mr. Smith, however, seems to plume himself upon this exploit: "Nothing," he says, "can be more absurd, than to suppose that the disease is seated in the spinal marrow, or that it can be communicated from one horse to another, at a distance of twenty miles. Nor can any thing set their ignorance of its production in a more clear point of view, than these circumstances: for instance, the disease appears in a quarter where it had never been known before; a doctor is sent for, and the cause demanded: this puts him to a *nonplus*. Being unable to account for it on rational principles, he hesitates: to have made a candid confession of his ignorance, would have sullied his reputation, and deprived him of a customer. He, therefore, looks around him, and happily recollects, that there is a glandered horse in the neighbourhood, though at a great distance, from which the wind had conveyed its dire effluvia to the subject before him: hence he is delivered of his dilemma, and the credulous owner is satisfied with the important

discovery. Here it is supposed, that a vapour possessing no contagious influence, is capable of producing the disease, after having passed through a medium which would have divested it of that power, supposing it had been possessed; which implies a double contradiction, as the disease cannot be produced by effluvia. And, upon this two-fold absurdity, their (*query* whose?) whole superstructure, relative to this disease, has been built.

"If the doctrine of the old physicians, respecting the blood being concocted in the liver, moving outwards to nourish the body throughout the day, and returning during the night, &c. &c. I say, if the doctrine of Harvey, has sent these absurd maxims into the shades of oblivion; ought not the discoveries of modern chemistry and pathology, (and of Mr. Smith) to banish from the veterinary science the vague and irrational maxims of its PROFESSORS? That man who suffers himself to be the dupe of vulgar error, by whatever authority it may be sanctioned, or however extensively it may prevail, without investigating the principles upon which it is founded, acts unworthy of himself. Had Harvey, had Sir Isaac Newton, acted thus, the world would not have been indebted to them, for the beauty, simplicity, and inconceivable benefits of their discoveries."

The author concludes his modest preface, with observing, "It is with much *diffidence* that I offer sentiments so novel, and opposite to those which have prevailed in every age, respecting this disease."

I should not have trespassed on the reader's time, by noticing this book, notwithstanding the expectation of new discoveries held out in the preface, did I not conceive it has a tendency to disseminate an opinion, that might be productive of mischief; this is, that glanders are not infectious, or only in an inconsiderable degree; for he asserts, that "he has seen numerous instances of horses that have stood with those really glandered, without catching the disease; and of others being affected with it, where no infeetion could possibly be traced: he is, therefore, decidedly of opinion, that the glanders cannot be communicated by effluvia." As Mr. Smith's book is intended for all those concerned with horses, many of whom are ignorant, perhaps, of the Latin language, he should not, I think, have made this display; it would have been better to state in plain English, whether he means by effluvia, what flows or runs off by the nostrils, or the invisible vapours escaping from the body. If he means the latter, such an opinion has not, I believe, been held by any author, or veterinary practitioner, for the last fifty years, at

least. In another place, (p. 12) he says of the chronic farcy, that it may, with more propriety, be called *atrophia debilium*, than farcy. Now, however profoundly skilled he may be in the Latin tongue, Mr. Smith has certainly chosen an improper time for showing it.

"There is no disease, (Mr. S. says) more local and specific than glanders. He has seen instances, where the surface occupied by the disease could be covered by the end of his thumb: that, in order to propagate it, it is necessary that the matter discharged by the nostrils be applied to the action of the absorbents in its most recent state, for which purpose, a perforation must be previously made in the skin; and in this way, most of the animal poisons, such as the vaccine virus, and the poison of the viper, are introduced into the system." "The animal poisons," he continues, "such as that of the viper, exert their baneful influence upon the different species of animals to which they are applied; now if the mucus issuing from the nose of the glandered horse, be so infectious as it is generally supposed, how is it that those animals which have access to those places where they stand, and in which they are frequently confined, escape the disease, especially dogs, who often feed on such horses immediately after death?" If the

author had attended sufficiently to his preceptor, I mean Mr. Coleman, he would have known, what I conceived no veterinary surgeon was ignorant of, that the glanders cannot be given to any animal, except the horse, the ass, and the mule. In like manner, the venereal poison, according to the experiments of Mr. John Hunter, and others, acts only on the human body.

## CHAPTER VI.

### *On the Nature and Causes of Farcy.*

HAVING shown that the matter of glanders will produce both farcy and glanders, and that the matter from a farcy *bud* has the same power, it may appear unnecessary to treat of these diseases separately: there is, however, a difference between them.

The glanders, in whatever degree they may exist, I consider to be a constitutional disease; but the farcy is, in some cases, merely local: the experiment first described may serve as an example of this. The inoculated part was, in the first instance, a local complaint, and may be considered as the most simple stage of farcy*.

* Mr. Blaine makes the following remark on this passage: "Though Mr. White's own experiments tend to show the specific similarity that exists between farcy and glanders sufficiently clear, yet he appears, in another part, to consider farcy as a local disease, and glanders always a constitutional one. I cannot but regard both these views of the matter as somewhat erroneous; for although the fact is certain, that the extirpation of a farcy bud will often destroy all farther progress of the complaint, so will the destruction of the syphilitic chancre, there is reason to believe, in some instances, pre-

It has been proved, by experiment, that, if a red-hot iron be freely applied in such cases, within three or four days after the experiment, its poisonous nature will be completely destroyed; and, after the slough, occasioned by the burning, has separated, nature will gradually complete the cure:

vent the future progress of the venereal virus: but no prudent surgeon would trust to it. On the other hand, I believe, there is no doubt also, but that the effectual cauterization of a glandered sore of late standing, and artificially created, may prevent any future symptoms of the malady in many instances. These circumstances will occur equally in both diseases, in the very early stages, but in neither do they happen in advanced periods of their existence, and consequently no difference between the two can be deduced." There is certainly some obscurity in the passage, on which Mr. Blaine has made this remark. I should have said, perhaps, that farcy, in some instances, *may be*, instead of *is*, a local disease: but it may be seen, that in speaking of the treatment of farcy, I have advised it in every instance to be treated as a constitutional disease, as it is difficult to distinguish the local farcy; and if such distinction could be easily made, we know not precisely, how early the poison may pass into the system. From my experiments, however, it appeared probable, that its passage through the lymphatics is always indicated by their swelling, or becoming corded: but this criterion could only apply to the superficial lymphatics, and is therefore of no use in practice. In stating that I consider glanders to be always a constitutional disease, I mean that common form of the disorder, where there is a discharge from the nostril. If the membrane within the nostrils were scratched, and glanderous matter applied, the chancre so produced, would surely, in the first instance, be local; but we can hardly conceive, that such a circumstance can happen spontaneously. See experiment 2.

but, if the hot iron be not applied until corded lymphatics are seen going from the sore, it is likely the constitution will be ultimately affected with glanders. It is not improbable, I think, that the farcy may, sometimes, be thus accidentally produced; for, if the slightest scratch be made in any part, and glanderous matter conveyed to it by any means, it would certainly amount to inoculation, and the same effects would follow. It may also be conjectured, that a common sore is thus, occasionally, converted into farcy. It is certain, however, that farcy is often, at its first appearance, a constitutional disease; either arising from communication with a glandered horse, or depending upon some other cause, of which we have no precise knowledge.

To illustrate this, let us suppose a sound horse to be kept in the same stable with one that is glandered, eating out of the same manger, and drinking out of the same pail; little doubt exists of his soon becoming infected. The disease may not appear at first in the form of glanders, though this is most commonly the case; it may, in the first instance, assume that appearance, which is named farcy. A horse, however, may be attacked with farcy, when he has not been known to have had any communication with a glandered horse; and

farcy, thus produced, has been followed by glanders.

If it were proved, in such cases, that the horse had not been exposed to any source of contagion for a considerable time previous to the appearance of the disease, no doubt could be entertained of the farcy being sometimes produced by other causes than contagion. I have seen several instances, where this appeared to be the case: and though this opinion has not, I believe, been absolutely proved, yet it is generally believed, and is certainly probable; but what the causes are, by which farcy is so produced, has not been correctly ascertained. I am of opinion, they are the same as those, by which glanders appear to be sometimes generated; namely, exertion, bad or insufficient quantity of good provender, and hot, close stables. This spontaneous kind of farcy is often preceded by general indisposition; the horse becomes weak, loses flesh, and feeds badly. These symptoms gradually increase, and, at length, farcy buds and sores make their appearance, which are soon followed by glanders.

Mr. Blaine observes, in his Outlines of the Veterinary Art, page 403: "That glanders is contagious, there is no reason to doubt, but the degree in which it is so, has been disputed; nor shall we,

perhaps, readily come at the truth, until a great number of accurate experiments have been made on this very point. I formerly thought it more frequently engendered than caught; but a very extensive experience has since disposed me to consider it as more frequently taken by contagion, than engendered within the constitution. But though this is sufficiently interesting, it is even of more importance to determine how the contagion is communicated, which has hitherto been differently accounted for, and is not yet satisfactorily explained. I have seen much of it in the army, and in other situations, and watched its progress attentively; but as I always happened to be denied the opportunity of much experiment, I have not been able to satisfy my mind entirely on this point. Mr. White's experiments go to prove, that the simple contact of glandered matter applied to a surface neither abraded nor inflamed, will not produce it; it has even been put up the nose (in many instances) and retained there without occasioning any ill effects; and though this is in direct contradiction to what occurs in the venereal virus, which will communicate its effects through the medium of a healthy mucous membrane, yet it corresponds with what I have observed; for I have rubbed the matter on various parts of the body, and have in-

troduced it under the eyelids, and no ill consequence ensued: but on rubbing some glandered matter into the heels of a horse affected with grease, and condemned to the dogs, farcy soon appeared."

I have transcribed thus much of Mr. Blaine's work, to show that he also is now of opinion, that glanders are more frequently taken by contagion, than engendered in the constitution; and this seems to be the result of an attentive and mature consideration of the subject. Mr. Blaine has very judiciously observed, that accurate experiments are still wanting, to prove satisfactorily, in what degree the disease is contagious, and by what medium the contagion is communicated. I believe it will be generally admitted, that the first step towards accuracy in experiments on this subject, whether they are instituted for the purpose of determining these, or any other questions relative to glanders, is to establish a criterion, by which the nature of the disease supposed to be glanderous may be clearly proved.

It may be said, that the symptoms of glanders are such, that they cannot well be mistaken by an experienced practitioner: but, I believe, those of the most extensive experience will admit, that cases often occur which so nearly resemble glanders, though of a different nature, that they cannot

give a decided opinion on the nature of the disease; and it is from this circumstance, that glandered horses, and such as are only suspected of having the disease, have so often been kept even for months before their fate has been decided upon. How much mischief may have been done by horses so situated may be conceived, but cannot be calculated; and it is to be feared also, that, by a precipitate decision in such cases, many valuable horses have been unnecessarily destroyed. The variety of opinion among veterinary practitioners, respecting glanders, seems to have arisen from the want of such a criterion, by which the nature of a discharge from the nostrils may be with certainty determined: until this is established, the result of experiments cannot be depended on, and the most experienced will often be puzzled, when a suspected horse is brought for his inspection. In the following chapter, a test for this purpose is described. Since it was first proposed (1812) I have had several occasions for employing it, and can truly say, it has fully answered my expectation. It is to be hoped, that those who pursue this interesting inquiry will, in future, begin by proving that the subject of their experiments is really glandered. If it be granted, and I trust it will be by those who have had opportunities, and will

candidly investigate the subject, that the only specific or peculiar character of glanders is the contagious quality of the matter which issues from the nostrils, and that the same quality is distinctive also of the matter from the farcy tumour or *bud*, then will the utility of the *test* be also acknowledged.

## CHAPTER VII.

### *Description of a Test for distinguishing the Glanders with Certainty from other Diseases.*

WHEN we consider the contagious nature of glanders, and that they frequently occur in so slight a degree, that the most experienced practitioners are unable to give a decisive opinion upon the nature of the complaint; the test I am about to describe will, I trust, appear of sufficient importance to be made public. Cases of this doubtful kind are very common: I have often known horses kept several months, before the symptoms have become sufficiently conspicuous, to enable the practitioner to decide upon the nature of the disease. The mischief arising from this is more considerable, than the public are aware of; and I am inclined to believe, that it is a principal means of the extensive propagation of the disease. When a horse is attacked with glanders in a violent degree, he is immediately separated or destroyed, and no others are infected; but, when the symptoms are so inconsiderable as to escape notice, many horses may

be infected, before it is thought necessary to separate him from others.

The following case may serve to illustrate this. A valuable horse was attacked with the mild kind of glanders; and, as no suspicion was entertained of his being unsound, he was sold for a large sum. A few months, however, after this, the discharge became so considerable as to excite alarm; and, on application being made to me, I did not hesitate to pronounce the horse to have been glandered at the time he was purchased. In consequence of this, the money was returned, and the horse destroyed. This opinion was soon after confirmed by the disease appearing in two colts, that had communication with this horse before he was sold.

All these doubtful cases may be distinguished with certainty, by inoculating a sound horse, *i. e.* one free from glanders and farcy, with matter taken from the nose of that which is supposed to be glandered. If it be the glanders, the effect described in experiment 1, page 22, will be produced. If it be any other disease, no inflammation or swelling will follow; unless the experiment be clumsily performed, and the part much irritated: in this case, some inflammation and swelling may be produced, which, however, will go off in two or three days. If, in making the incision, the part should

bleed, it is necessary to wait until the bleeding has ceased; or the blood would so dilute the matter, as to render it inactive.

It is necessary also to observe, that, when there is only a very trifling discharge of matter, it may be diluted with fluid that proceeds from the lachrymal duct; which would lessen, if not entirely destroy, the activity of the glanderous poison. The following experiment will illustrate this opinion. Glanderous poison was mixed with twelve times its weight of distilled water, and with this mixture a sound horse was inoculated; a slight degree of inflammation and swelling was produced, and a small ulcer, which, in a few days, healed spontaneously.

In this case, though the diluted matter did not produce any permanent effect, yet it was different from the matter of strangles, or of any other matter; which, as I have often observed, would not have caused any inflammation or swelling. It appears, also, from some experiments, that glanders are not readily produced by applying glanderous matter to a common sore or ulcer: this may depend on the dilution the glanderous poison undergoes from the matter on the surface of the sore, or on a want of absorbing power in the part.

Many persons object to this mode of distin-

guishing the glanders, either on account of the expense of procuring a sound horse for the purpose, or the apparent cruelty of infecting him with an incurable disease. But when the suspected horse is of considerable value, and a horse can be procured that would otherwise be killed for the hounds; I cannot see any reasonable objection to making the experiment. To waggon-masters and others, who keep a great number of horses, it must surely be of importance, to ascertain the nature of these doubtful cases as speedily as possible: and in regiments of cavalry, where we often see suspected horses kept several months, it will be found highly useful.

Since the second edition of this book was published, I have found young asses the best subjects for the test, as they appear to be more susceptible of the disease, and can generally be purchased at a small price. The following case, which occurred in March, 1816, is an instance of its satisfactory application: I was desired to see a mare, by Chancellor Percy, of Exeter, that was supposed to have the strangles; I found a considerable enlargement on one side of the under jaw, and a small discharge of matter from the corresponding nostril. The proprietor was informed, that it was very unlike strangles, as there was neither cough nor

dulness of the eyes; in short, the mare appeared to be in perfect health and excellent condition. The swelling was blistered, and some opening medicine given. About a week after, being informed that a pony, which stood next the mare, had had a discharge from the nostril, and a swelling under the jaw, for some time, I thought proper to examine it, and found there was still a discharge from the nostril, and an enlargement of the glands; but both were inconsiderable, and the animal appeared in perfect health. At the end of a fortnight, I found them in the same state; but having been informed, that the chancellor had lost a horse from glanders about twelve months before, though the place where it occurred was at a considerable distance from Exeter, and no communication could be clearly traced between them; yet as both the pony and mare had been in the state in which I found them for several weeks before I was called in, I felt no hesitation in saying, that it resembled the mild stage of glanders, more than any other disease, and that the test was, in my opinion, the only means by which the real nature of the disease could be speedily and with certainty determined. The mare being of considerable value, a healthy young ass, about two years old, was procured as a subject for the test. About the middle

of the ass's neck, some hair was cut off, leaving a bare part about the size of a dollar. A small lancet was then introduced under the cuticle, from above downward, so as to cause a few drops of blood to appear; the same was done on the other side of the neck. Some matter was then taken from the mare's nose and introduced by means of a thin slip of wood, nearly of the size and shape of a lancet, into the orifice on the right side of the ass's neck; and some matter from the pony's nose was introduced, by a fresh slip of wood, into the orifice on the left side: the ass was kept afterwards in a coach-house, and had no kind of communication, either with the mare, the pony, or any other horse, and had a clean bucket to drink from. Two days after the operation, the inoculated parts were swollen and very tender; the next day, the swelling and tenderness had increased considerably on both sides, and on removing a scab from the surface, ulcers were seen, similar to those I have described as farcy sores. The lymphatics going from the sore were inflamed and corded. The ulcers spread rapidly, farcy buds appeared in the course of the corded lymphatics, these burst and became ulcers of a similar appearance to the original one. About a week after the operation, a very slight discharge was observed from the left

nostril; so inconsiderable, indeed, that it would have escaped notice in another animal, and the glands on the same side of the under jaw were a little enlarged. The discharge from the left nostril, and the swelling of the glands on the corresponding side, gradually increased, and in a little more than a fortnight, the animal was considered completely glandered by several persons who examined him. The ass was destroyed, and on examining the head, several ulcers of considerable size were discovered on the left side of the septum or partition of the nostrils; there was a small quantity of matter in the left frontal sinus, and the cellular process of the ethmoid bone on that side was inflamed. In the right nostril, not the slightest ulceration could be perceived; but the pituitary membrane appeared rather more vascular than is usual, particularly towards the posterior part, near the throat. The lungs appeared perfectly healthy, but in passing the fingers over them, many small knobs could be felt, not exceeding the size of a small pea. The ass fed and drank well, and appeared in every respect, except what has been described, perfectly healthy, until he was destroyed for examination, but the ulcers in the neck had spread considerably.

By means of this test, a very important question

may be determined; that is, whether other diseases ever degenerate into glanders or not. We have before observed, that obstinate colds, and strangles, are supposed to be occasionally converted, by improper treatment, into glanders; that any discharge from the nostrils, which continues an unusual length of time, and is accompanied with a swelling of the glands under the jaw, is generally considered as glanders: and a horse, under such circumstances, is frequently destroyed. That such symptoms are generally the effects of glanders, is extremely probable: but I am of opinion, that the only certain proof of a horse being glandered is, his being capable of infecting others. If this be admitted, it will surely be allowed, that the most expeditious and ready way of ascertaining the real nature of such cases is the test here proposed.

It may be proper to observe, that, when the discharge from the nose is so inconsiderable, that it is difficult to collect matter for the inoculation, it may generally be increased by exercise: and, in such cases, it is advisable to collect the matter for two or three days, as it does not lose its poisonous quality by being kept a short time; for though a small quantity of matter is capable of producing the effect, it is better to use more than is sufficient,

as the infection will then take place more speedily, and in a greater degree.

The lachrymal fluid, which was before mentioned, proceeds from a small round orifice, that may be perceived at the lower part of the nostril: from this we may often see a few drops of a limpid fluid, like water, flowing, particularly in cold weather. In collecting matter for the purpose of inoculation, it is necessary to take care, that it is not mixed with this fluid. For, in the doubtful cases, where this test is most useful, there is often so little matter discharged, that it is difficult to procure more than is barely sufficient; and if this happen to be diluted, the effect may be such as to render the experiment indecisive.

It has been found by experiment, that matter taken from a farcy bud, before any caustic has been applied, will produce precisely the same effect as matter taken from the nose of a glandered horse.

## CHAPTER VIII.

### *On the Attempts that have been made to cure the Glanders.*

It would be a useless undertaking, to enter into a minute description of the various means that have been suggested for the cure of glanders; or to give a detailed account of the numerous experiments, that have been made for this purpose. It may be sufficient in this place, to recite, in a few words, the more material attempts that have been made for discovering a remedy.

Those who considered the glanders as a local disease, have employed every kind of injection, without effect. The nostrils have been syringed with emollient, astringent, and even caustic preparations, without success. It is probable, that the discharge, in some instances, has been suppressed for a time, and even ulcers within the nostrils healed, by such means; but, I believe, these applications have never been known to cure the disease. All the mercurial preparations have been resorted to without success. It has appeared, at times, that mercury, when administered to a con-

siderable extent, possesses some power as an antidote to the glanderous poison; yet such is the debility, which this medicine produces, when used in a large quantity, that the progress of the disease is generally accelerated by it. I have been frequently induced to give mercury a fair trial. In one of my experiments, it was given so as to excite a violent salivation; and in this case the disease was apparently cured, that is, an ulcer within the nostrils was perfectly healed, and the discharge had ceased. It was not convenient, however, to keep this horse a sufficient length of time, to enable me to ascertain the ultimate effect of my mode of treatment: about a fortnight after his apparent cure, he was destroyed, when, on examining the lungs, tubercles, or small hard tumours, were found on them, but no traces of the disease could be perceived within the nostrils. In several other cases, the same medicine not only proved ineffectual, but, in many of them, aggravated the disease. It is worthy of remark, that, in some cases of farcy, mercury appeared to possess considerable power over the disease.

When tubercles form on the lungs, I believe they generally, if not always, degenerate, sooner or later, into abscesses, and ultimately destroy the animal. I have examined a great number of

glandered horses after death, and have almost uniformly found those appearances on the lungs. In some instances, the tubercles have been so minute, as to be discovered only by passing the fingers over the surface of the lungs; when they have been perceived, like small gravel, or shot, under the pleura, or fine membrane, by which the lungs are covered. But, in the more advanced stages of the complaint, I have almost invariably found them of considerable size, and full of matter. The bronchial glands also are very commonly diseased.

From a knowledge of this circumstance, I am inclined to believe, that we shall never discover a remedy for the glanders, unless it be applied in the earliest, or first stage of the disease: for, when tubercles have been generated on the lungs, though their progress may be sometimes retarded, yet, I conceive, there is but little chance of their yielding to medicine.

The nitrous and muriatic acids have been given in glanders, and, at times, have appeared to be of some service; but have never succeeded in curing the disease. Arsenic has been also recommended, and, in several instances, I have been informed, has apparently cured the complaint; but it should be understood, that the nostrils were, at the same

time, syringed with a strong solution of potash, which, perhaps, caused a temporary cessation of the discharge. I have seen arsenic tried very fairly and extensively; but the result was not satisfactory.

It may here be proper to observe, that, though the discharge may have been suppressed by astringent injections, or other means, or if it cease spontaneously, still, if the swelling of the glands remain, the discharge will, sooner or later, return. This cessation of the discharge, indeed, sometimes happens; but I have never heard of more than two cases of glanders, that were spontaneously and permanently cured. (See chapter x.)

Verdigrise was, at one time, strongly recommended, both in glanders and farcy; but, when fairly tried, was found ineffectual. Blue vitriol, or sulphat of copper, has likewise been employed; this, though, like other tonic or strengthening medicines, it appears, at times, to retard the progress of the disease, I believe has never been known to subdue it. In short, after having, for the last twelve years, paid considerable attention to this subject, and made numerous experiments upon it, I have formed an opinion, that the glanders will always be found incurable, unless attended to at an early period; and though, in

many instances, they may have ceased spontaneously, or during the use of medicine, I think we may justly affirm, that, at present, they are to be considered an incurable disease. Many ignorant farriers may, no doubt be found, who would confidently undertake to cure the glanders, or any other disease, that has hitherto resisted the efforts of the regular practitioner; but, after reading the facts here stated, it is hoped the public will be sufficiently on their guard, and will not become the dupes of any illiterate pretender, who may promise to cure a disease, which, after much labour and perseverance, has been, by the most experienced practitioners, pronounced to be incurable. In chapter x will be seen some of the experiments that have been made on this subject; from which it will appear, that the medicines most likely to succeed are mercurials, aided by a judicious system of management, so as to prevent, as much as possible, the debilitating effects of the mercury. If the method I have proposed for distinguishing glanders from other diseases be adopted by those, who endeavour to discover a remedy for the disorder, the result of their experiments will be more satisfactory than the experiments hitherto made have generally been, because they

will rest upon a proper basis; and will, of course, be received by the public with confidence.

In concluding this subject, I think it right to advert once more to the mischievous effect of doctrines, that tend to weaken the public opinion of the contagious nature of glanders. That they are contagious, and in a considerable degree, has been clearly and abundantly proved; and though it has been asserted by an author before noticed, (Mr. Smith,) that he has seen *numerous* instances of horses standing by those *really glandered* without being infected, and that the disease *cannot* be communicated by *effluvia*, I hope that no one will have the temerity to repeat so hazardous an experiment.

Mr. Smith witnessed another extraordinary circumstance in 1807, which one would not have expected to hear of in a regiment of cavalry: "A horse, whose body and extremities were covered with farcy tumours, stood with another that had the strangles. They were both looked after by the same person, who, as soon as he had cleaned the former, applied the same brush, *wet with the matter of the ulcers*, to the latter. This was repeated every day for a month, and no transfer of the disease took place." This disgusting experiment was certainly unnecessary, as it had been ascertained

some time before, that neither the matter of farcy, nor of glanders, would produce any effect upon a horse's body, unless applied to a part that was wounded, or from which the cuticle had been removed.

In speaking of the cure of glanders, Mr. Smith advises, "that the horse be put into a good stable, stand clothed, be well attended, and exercised according to his strength: the nostrils to be kept clean, washing them with sponge dipped in warm water; the rack and manger also to be frequently washed with warm water, scrubbing them with a hard brush." We find precisely the same directions in Gibson, who describes the method he followed in the cure of two glandered horses, "whereby," he says, "will be shown, how far the power of medicine, with a right management of their diet and exercise, will contribute to a removal of that obstinate and, for the most part, incurable disorder." "Both these horses were in the first troop of guards. One of them had been in a stable where two or three horses had died of glanders. He was coming eight, and had no visible ailment besides a knot under his jaws, which was pretty large, and a nasty foul running at his nose from the same side. About the same time the troop horses were removed into new stables,

he was left in one of the old by himself, as a distempered horse, and continued there alone, for several months, without any abatement of the symptoms: but the winter and the damp weather drawing on, he caught a violent cold along with his own distemper. His coat began to stare, and he lost both his flesh and appetite, which he never did before. He grew exceeding weak, and began to have a deadness in his looks, so that we were concluding to have him shot as incurable; but being a fine troop horse, I resolved to make a further trial; and in order to this, had him removed to an infirmary stable belonging to the troop, where he could be kept warm and in the hearing of the other horses, which greatly cheered him; and after he had got rid of his cold, he was walked out every day, and had his exercise in the free open air. He was constantly curried and dressed thoroughly, and had his rack and manger often scraped and washed, and his pail cleaned and washed almost every time it was used. This induced him to eat and drink what was sufficient, and by that means contributed greatly to his recovery. For though there was little alteration during the winter in the swelling under his jaws or the running, yet he got strength daily, his flesh grew firm, and his coat began to look smooth and shining. His medicines were

balls composed of cinnabar of antimony, gum guaiacum, myrrh, saffron, and Castile soap; and sometimes drinks of guaiacum, rhaponticum, dock root boiled in spring water or lime water; and to heal the rawness and erosion on the inside of his nose, an injection was sometimes used of vinegar, spirit of wine and egyptiacum. In the spring following, the kernel began to lessen, the running at the nose looked whiter and of a better consistence, and towards the end of the summer, the kernel was no bigger than a hazel nut, and the running, for the most part, quite gone; and at last, ended in some few drops of clear water, which used to distil now and then from the nose, so that it was somewhat above a year before the cure was completed, and very near twelve months more before he durst be trusted to go into the ranks, till the day that the distillers' act commenced, when he was ordered out with the rest, and did his duty regularly afterwards, without any return of his complaint.

"The other horse baffled all the efforts I was able to make, for six or seven months, though he took the same medicines, and had the same care and attendance; till at length he broke out into biles in several places, which every one that saw him pronounced to be the farcy; but I was of another mind, for these never followed the course

of the veins, but appeared in some interstices between the tendons of the muscles. The matter was laudable and of a good consistence, and though many of these biles came in succession one after another, yet those that broke soon healed up, the horse grew hearty and active, the kernel and running at the nose lessened and abated gradually, and in a few months after he was perfectly cured."

Here we have two cases minutely described, which were treated successfully, and they appear not to be the only ones that occurred in his practice; for he observes, "I have related these two cases only to show the trouble and difficulty of curing the glanders, even where the symptoms are favourable; for among the many glandered horses I have seen, perhaps not one in fifty was to be meddled with; therefore I should never advise any one, that has a horse truly glandered, so much as to attempt a cure."

Mr. Smith seems to have been more fortunate than Gibson, and mentions six cases in which he succeeded. In the treatment recommended by this gentleman, there is not the least appearance of novelty. In one case, he adopted La Fosse's plan of opening the frontal sinus, and advises also, that an opening be made (when the disease is seated in

the nostrils) in the superior part of the nose, in order to introduce mild injections. "In the beginning of the disease," he says, "a rowel may be introduced between the branches of the jaw bone, or the cautery may be applied to the tumours, vesicatories (blisters) may be applied to the external surface of the frontal and nasal *sinuses* (*i. e.* the forehead and nose), and one of the following formulæ is to be administered every morning at nine o'clock."

The efficient medicines contained in the formulæ are, No. 1. Sulphat of copper, 2 or 3 drams. No. 2. Sulphat of copper, 2 drams; calomel, ½ dram. No. 3. Calomel, 1 dram; opium, ½ dram. No. 4. Muriat of quicksilver, (corrosive sublimate,) one scruple or half a dram; opium, one dram. No. 5. Ethiops mineral, half a dram or 1 dram! No. 6. White arsenic, 1 dram; assafœtida, ½ ounce. No. 7. White arsenic, two drams; columbo root, six drams; opium, ½ dram. No. 8. Sulphat of iron, (salt of steel,) two drams; bark, one ounce; opium, ½ dram. These balls are made up with honey, and aniseed, ginger, or linseed powder.

All these medicines have long since been repeatedly and unsuccessfully tried by other practitioners; and though much was expected at one time from La Fosse's plan of opening the frontal sinuses, for

the purpose of introducing injections, as described in Bartlet's Farriery, it was soon found to be ineffectual. Since, however, Mr. Smith has been so fortunate in the treatment of horses, which he thought were really glandered, it is to be hoped that government will afford every facility to veterinary surgeons in the army, in their attempts to subdue this formidable disorder, whatever expense or length of time may be found necessary for its accomplishment. There will not, then, be occasion to resort to the very expensive expedient suggested by Mr. Smith, for the prevention of glanders; which is merely "to pull down all the present barracks, and build new ones upon a more eligible plan." "But," he observes, "as I am aware that is not likely to be accomplished, however laudable and necessary the suggestion may appear; I will only point out such alterations and improvements as may be made in the stables as they at present exist." Having done this, he advises a plan, which for many years has been considered the only effectual one.

"When the glanders prevail in a regiment, the horses ought to be frequently and cautiously examined, and on discovering the least symptoms of the disease, the subject should be instantly separated from the other horses, and the stable in

which he stood, be well washed with warm water and soap; scouring the rack and manger with a hard brush. If after this, there be any doubt or apprehension of the infection still remaining in the stable, the ablutions of water may be repeated frequently, and recourse had to a fumigation, with a mixture of sulphur and charcoal; or marine or sulphuric acid gas may be detached through the stable, keeping the doors and windows shut during the process. There are, besides, a variety of other means recommended for purifying stables supposed to be infectious, such as limewater and size, pitch, petroleum, &c.; but whatever gives the hardest surface, ought to be preferred, as it will be most easily made clean."

Who would not suppose, on reading this passage, that the author intended to efface the impressions, which some other parts of his work are likely to make on the reader's mind, and awake him from the dangerous security, into which they may have led him? He is not satisfied with directing merely, that a horse having the slightest symptoms of glanders should be separated from others, but that it should be done "INSTANTLY." Nor does he think it sufficient to remove the diseased subject, and wash the stable where he stood with warm water and soap, and scour the rack and manger with a hard

brush; he advises a frequent repetition of the ablution, and afterwards fumigation. But this reasonable expectation is unfortunately defeated by the conclusion of the paragraph, where he informs us, that "These measures are inserted for the benefit of the debilitated and delicate subjects, to whom a foul rack, manger, &c. are always disagreeable: they may also be of use to the fearful and incredulous proprietor."

## CHAPTER IX.

### *On the Treatment of Farcy.*

When the farcy exists as a local disease, it may generally be cured by an early application of proper remedies; but, when it is constitutional, that is, when it arises from the blood being contaminated with the glanderous poison, I believe it will generally be found incurable. It is true, we may often appear to succeed in our attempts to cure this disease; caustics alone will frequently remove all the symptoms for a time, and, in some instances, the horse has continued apparently free from the disorder for several months; but, according to my experience, it is most commonly succeeded, sooner or later, by glanders.

It is difficult, in many cases, to distinguish between local and constitutional farcy; therefore, it is always advisable to attempt a cure, unless the horse, at the same time, be decidedly glandered: even in such cases, the external symptoms may often be removed by caustics. When the small tumours, or *buds*, contain matter, which may be known by their feeling soft, and yielding a

little to the pressure of the finger, they should be opened, and, after pressing out the matter, lunar caustic, or the following solution, should be freely applied, and may be repeated, allowing the slough, which these caustics occasion, first to separate:

| | |
|---|---|
| Muriat of quicksilver . . . . | 2 dr. |
| Muriatic acid . . . . . . . . | 1 oz. |

Mix.

This solution may be applied, at first, undiluted; but, after the first or second slough has separated, an equal quantity of water should be added. When the sores look red and healthy, the edges smooth, and are gradually approaching each other, no farther application will be required. If the lymphatics swell, or become *corded*, as it is termed, or if the *buds* continue hard, the whole surface should be blistered.

Thus far we have described the local treatment of the disease; it is, however, of the utmost importance to give the following medicine, as soon as the disorder is perceived; for, if it happen to be a local complaint only, the constitution may, by its means, be preserved from infection, and the horse radically cured. But it is necessary to continue the use of the medicine, for a short time

after the disease has been removed. The horse should be exercised twice a day, and fed with a mixture of bran and oats, with the usual allowance of hay: green food has been recommended; but I have, several times, during the summer months, turned a farcied horse into a good piece of grass, without advantage. In one instance, only, I have known it prove an effectual remedy. A horse appeared to be decidedly farcied, and, being of little value, the owner turned him into an orchard; at the end of three or four months he was taken up, perfectly cured. I have been informed, that the complaint never returned, either in the form of glanders or farcy. This induced me to make a farther trial of it; but, in no one instance, did it appear to be of any service.

Exercise, I am convinced, is a useful auxiliary to the remedies here recommended; and every means should be employed to keep up the strength of the horse. It is not unlikely, that green food, such as tares, carrots, or young grass, may be given in the stable, with advantage; but I have never seen it tried. A well-ventilated stable should be chosen, and the water given at the summer temperature.

## FARCY BALL.

### N° 1.

| | |
|---|---|
| Take of white arsenic and muriat of quicksilver, each . . . | 8 gr. |
| Linseed powder . . . . . . . . | ½ oz. |

Sirup enough to form a ball for one dose.

### N° 2.

| | |
|---|---|
| Sulphat of copper (blue vitriol) . | 1 dr. |
| Muriat of quicksilver . . . . . | 8 gr. |
| Linseed powder . . . . . . . . | ½ oz. |

Sirup enough to form a ball for one dose.

### N° 3.

| | |
|---|---|
| Sulphat of copper . . . . . . | 1 dr. |
| White arsenic and muriat of quicksilver, of each . . . . . . | 8 gr. |
| Linseed powder . . . . . . . . | ½ oz. |

Sirup enough to form a ball for one dose.

The quantity of muriat of quicksilver and arsenic may be gradually increased to fifteen, or even twenty grains, and the sulphat of copper to a dram and half, or two drams; but, when it appears to diminish the appetite, or cause sickness or uneasi-

ness in the bowels, the dose should be lessened, or the medicine discontinued, until these effects cease. It will be seen, from the experiments related in chapter x, that both arsenic and muriat of quicksilver have been often given in doses of two drams, (120 grains,) twice a day, without producing any violent effect; and have, in some instances, been given in such doses, every morning and evening, for many days, without destroying the horse. It will be seen, however, that it proved fatal, in one case, in a much smaller dose, (see experiment 7) and, as it does not appear that any advantage is obtained by giving it so largely, I think it should never be attempted.

One of the balls, of either prescription, is to be given every morning and evening; I believe they are nearly equal in point of efficacy, but am inclined to think, that N° 3 deserves a preference. Should the medicine at any time produce sickness, or pain of the bowels, it will be advisable to give the horse some mucilaginous fluid; such as infusion of linseed, with about a dram of carbonat of potash, (salt of tartar,) three times a day. As the powdered arsenic of the shops is frequently adulterated, it is recommended, in order to insure its purity, to purchase it in lump; but then great care must be taken, to powder it very finely.

If, during the progress of farcy, the glands under the jaw become enlarged, and particularly if a little moisture appear about the nostril, it may be considered as a constitutional affection, which will soon assume the form of glanders. It has been observed, in a former part of the work, that, if a farcy sore, that has been artificially produced, by inoculation with glanderous matter, be freely cauterized at its commencement, it would gradually heal as a common sore, and the constitution would probably escape the infection. It is difficult, however, to ascertain whether the disease, when first observed, be local or constitutional. If it be local, the medicine we have recommended will probably secure the constitution: if it be constitutional, I believe it is more likely than any other medicine to cure the disease.

It will be seen, from some experiments related in chapter x, that, when mercury was given to a horse, that had farcy sores on his body, they soon changed their appearance, became of a red, healthy colour, and were gradually healed. From this it may be inferred, that it is the best mode of treatment; as, by the early application of caustics, the absorption of the poison may be promoted. I am, however, of opinion, that the caustic should be applied immediately after the farcy tumours, or

*buds,* have been opened; and to farcy ulcers, or sores, as soon as they are observed. But external applications alone ought never to be depended upon: the medicine should always be given at the commencement of the disease.

# CHAPTER X.

## *Miscellaneous Experiments.*

### EXPERIMENT I.

A YOUNG horse was attacked with a discharge of matter from the left nostril only, and a considerable swelling of the glands under the jaw. On examining the nostrils, a large ulcer was observed. An incision was made in the swollen gland; into which a caustic was introduced, and the following ball given every morning and evening:

| | |
|---|---|
| Muriat of quicksilver, commonly called corrosive sublimate . | 1 dr. |
| Flour . . . . . . . . . . . . | ½ oz. |
| Sirup enough to form a ball. | |

This produced no sensible effect, except that of making the horse stale more than usual. On the third day, the quantity of sublimate in each ball was increased to two drams, and given twice a day as before: this was continued for three days, without producing any other effect, than that of a

strong diuretic. On the seventh day, a violent salivation took place, the tongue was much swollen, and the horse was incapable of feeding; but the discharge from the nostrils had ceased, and the ulcers were completely healed: the medicine was discontinued, and the mouth syringed with a solution of alum. On the ninth day, the horse could eat soft food; but there was still a considerable discharge of saliva from the mouth. On the tenth day, there was a very slight appearance of moisture about the left nostril, and the salivation had considerably diminished; on the following day, the nose was quite dry. Two days after, the nose became rather moist again, but no ulcers could be seen; the horse was extremely weak, but capable of feeding, the salivation having ceased. He continued in this state about a week, and was then destroyed. On examining the nostrils and cavities of the head, there was no appearance of disease, but tubercles of considerable size were found on the lungs. The stomach and bowels did not appear to have sustained any injury from the sublimate.

## EXPERIMENT II.

A horse, decidedly glandered, took half a dram of sublimate, twice a day, without any sensible effect; after two days, the dose was increased to one dram, twice a day: this acted as a strong diuretic, but produced no other effect. Two days after, it was augmented to two drams, twice a day, which took off the appetite, and was, therefore, discontinued for three days, when he again took the same dose, with half a dram of opium added to each; it soon had the same effect: he continued to take it, but the discharge became more copious and very fœtid. The ulcers, within the nostrils, spread rapidly; and, after a few days, the horse died, apparently from excessive debility. In this case, also, tubercles were observed in the lungs; the absorbents of the liver were considerably enlarged.

## EXPERIMENT III.

A horse, decidedly glandered, took daily one dram of calomel; after three days, the same dose was given twice a day, and persisted in for twelve days: the only effect it produced was that of a strong diuretic; and, as the disease had gradually

increased, the horse was destroyed. In this case, likewise, there were tubercles on the lungs, but so small, that they could only be perceived by passing the fingers over the surface.

### EXPERIMENT IV.

A horse, decidedly glandered, took one dram of the red oxide of quicksilver, twice a day; and, once a day, the horse was exposed to the fumes of mercury. The preparation employed for the fumigation was calomel, that had been washed in a solution of ammonia; by which it is changed to a dark colour. Half an ounce of this was placed on a red-hot iron, and the horse was shut up with it, in a small, well-closed stable. After a few days, the mouth was considerably affected, and the breath had an offensive smell; the horse became excessively weak, and the disease had gradually increased. The horse, at length, was so debilitated, that it was thought proper to destroy him. In many other cases, mercury was fairly tried, in various forms, and uniformly with the same result.

### EXPERIMENT V.

A horse, decidedly glandered, took one dram of

arsenic, formed into a ball with flour and sirup, twice a day. It was continued three days without producing any sensible effect; the dose was then increased to two drams, twice a day, and continued for a week, without causing much inconvenience to the animal. As the disease had increased, rather than abated, he was then destroyed. Arsenic was given to a similar extent, in many cases of glanders, without any satisfactory result: most commonly, it produced scarcely any effect; sometimes it produced a fatal inflammation of the stomach and bowels, particularly when the dose of two drams was persisted in a considerable time.

### EXPERIMENT VI.

A veterinary surgeon, in the army, had been trying the effect of arsenic upon a glandered horse; and, after giving it without effect in doses of two drams, he increased the dose to half an ounce: finding this produced no sensible effect, he suspected, that the powdered arsenic he had been using was adulterated, and, therefore, had some powdered under his own inspection. Upon giving this to the same horse, the first dose ($\frac{1}{2}$ oz.) brought on a fatal inflammation of the stomach and bowels.

## EXPERIMENT VII.

A horse, attacked with farcy, took the following ball twice a day:

White arsenic and sublimate, of each . . . . . . } 10 grs.
Flour and sirup enough to form a ball.

The tumours, or *buds*, were opened, and the solution of sublimate was freely applied to them. After a few days, the dose of the medicine was increased to fifteen grains. A few days after this, a slight purging took place, and the horse refused his food. There being no medical person present, the groom fancied these symptoms arose from the farcy; and, instead of discontinuing the medicine, he gave it three times a day: this soon brought on an inflammation of the stomach, of which the horse died.

## EXPERIMENT VIII.

Four glandered horses were put under a course of arsenic: the dose ten grains, twice a day, which was gradually increased to thirty. The nostrils were syringed with a solution of arsenic and

potash. In every horse, this treatment was productive of manifest advantage; in one, every symptom was removed, but the discharge returned, though in a much less degree; in another, glanderous ulcers, within the nostrils, were perfectly healed. These good effects were not permanent; and, after continuing the treatment for several weeks, it was thought necessary to shoot each of the horses.

### EXPERIMENT IX.

*April* 9, 1801.—A horse was attacked with farcy in the off fore leg. The tumours had burst, and were discharging thin glairy matter. One dram of sublimate was given every day, and the dose gradually increased to two drams, and given twice a day. This treatment was continued three weeks; and, though nothing had been applied to the sores, or *buds*, they were all apparently cured. The medicine was discontinued; but a tumour of considerable size appeared, two or three days after, on the outside of the off thigh: the sublimate was again given, in the dose of one dram, and a blister applied to the tumour. A farcy bud then appeared, a little above the tumour, which was succeeded by several more on the inside of the thigh. Two or three days after this, a discharge from the nostrils,

and a swelling of the glands under the jaw took place: ulcers also appeared within the nostrils. Under these circumstances, it was thought proper to destroy the horse. On examining the body, after death, the stomach appeared perfectly healthy, notwithstanding the large quantity of sublimate that had been given. The kidneys were unusually large, and there were small tubercles on the lungs. It is necessary here to observe, that sublimate, in large doses, uniformly acts as a powerful diuretic on the horse.

### EXPERIMENT X.

A farcied horse took half a dram of calomel twice a day; and, by continuing to give it for ten days, the disorder was apparently cured, though no topical remedy was employed: it was then discontinued, and, about four days after, the disease returned. Calomel was again given, and the farcy appeared to be going off; but at this time the horse became decidedly glandered, and was therefore destroyed.

### EXPERIMENT XI.

A horse had the farcy in the hind leg; he took the prescription, N° 1, and caustic was applied

to the sores. In three weeks he was perfectly cured. The medicine was continued a week longer: the horse has never had a return of the complaint; nor has he had any symptoms of glanders, though nearly two years have elapsed since his recovery. In many other instances, the farcy, by the same kind of treatment, has been radically cured, and not succeeded by glanders.

### EXPERIMENT XII.

A farcied horse took half an ounce of white hellebore, powdered, and formed into a ball, twice a day; after taking a few doses, it produced considerable nausea, and frothing at the mouth. It was discontinued three days, and then given, in the same doses, for about ten days; during which time, the farcy gradually disappeared. The only external application made use of was a strong blister. About five months after, the horse became glandered. In a great many instances, the farcy, after having been apparently cured, has been succeeded by glanders, the interval between the two diseases varying considerably. Sometimes, the glanders take place during the continuance of farcy; they occur more commonly, however, from one week to a month after the

farcy has disappeared: this is generally the case when the disease comes on in a slight degree only. The more virulent kind of farcy is almost always accompanied, or immediately succeeded, by glanders. The longest interval I have observed was in the case just mentioned.

### EXPERIMENT XIII.

A horse was inoculated in the neck, with matter taken from the nose of a horse that had the glanders in a slight degree; the next day, the part was a little swollen and tender; in a few days, it became an ulcer, of that peculiar appearance, by which the farcy sore is characterized; the lymphatics going from it were swollen, or *corded.* About a fortnight after this, a considerable discharge took place from the nostrils, and the glands under the jaw were enlarged: the hind legs began to swell; and, soon after, several farcy buds appeared, about the inside of the hind legs and thighs: large ulcers appeared within the nostrils; and the disease increased so rapidly, that it was thought proper to destroy the horse. It appears, from a great number of experiments, similar to this, that the glanderous matter invariably produces the effect here described. In some instances, however, the pro-

gress of the disease is very slow, and the first appearance of glanders so slight, as to escape the notice of a common observer. This variety seems to depend, in a great measure, on the state of the animal upon which the experiment is performed, and the quantity of matter used in the inoculation.

### EXPERIMENT XIV.

Some glanderous matter was taken from the nose by means of lint. The lint was put into a small box, which was kept from the 24th of March to the 13th of June. Two horses were then inoculated with a little of this dry matter, that had been mixed with a few drops of water: in both horses, the part was inflamed and swollen the following day; and, in a few days, became an ulcer. These ulcers, however, spread; but, after remaining stationary a few days, they gradually healed.

### EXPERIMENT XV.

A horse was inoculated with the matter taken from the nose of a horse that had the strangles; no effect was produced by it. The matter from the foot of a cankered horse was applied, in another instance, in the same way, and with a similar result.

### EXPERIMENT XVI.

Some glanderous matter was applied to a small, healthy looking sore; two other sores were near it, of the same appearance, to which glanderous matter was not applied: the latter soon healed, though nothing was done to them; but the other remained in the same state about a fortnight, and then gradually healed spontaneously. From these experiments, it appears, that, by diluting the glanderous matter, either with blood, water, or the fluid on the surface of a sore, it is so changed, that, though it produces more or less of local effect, it does not affect the constitution.

### EXPERIMENT XVII.

Inoculation was performed with glanderous matter, that had been a short time exposed to the vapour which is produced by pouring oil of vitriol on a mixture of salt and manganese. No effect was produced. Matter, that had been exposed to the fumes of nitrous acid, caused an ulcer, which, after a short time, gradually healed.

### EXPERIMENT XVIII.

A horse was inoculated with matter taken from

a farcy *bud*, that had been recently opened. It produced precisely the same effects as glanderous matter.

### EXPERIMENT XIX.

A horse was inoculated with matter taken from the nose of a horse, that had the glanders in so light a degree, that he was considered, by most of those that examined him, to be free from the disease. It produced, however, the local effect, in a considerable measure; and, at the end of twelve days, the horse was universally farcied; and, in a few days after, decidedly glandered.

After the foregoing observations and experiments, it is unnecessary to say more on the subject of prevention. It may be sufficiently obvious, that the only effectual mode of preventing the destructive ravages of glanders and farcy consists in separating diseased horses from others as soon as the symptoms are observed, however trifling they may appear; in removing, or carefully cleaning every thing, on which the glanderous matter may have fallen; and covering the rack, manger, and every part to which any of the matter could have adhered, with whitewash or paint.

Waggon-masters, and others, who keep a considerable number of horses, should convince their servants, that both glanders and farcy are highly contagious; and should point out to them the manner in which it appears to be communicated. I believe it is the opinion of many veterinary practitioners, and of almost all persons concerned much with horses, that these fatal diseases are frequently generated by other causes than infection. My experience, however, inclines me to a different opinion. But, if glanders or farcy be so produced, they may probably be prevented, by not working or feeding horses improperly, and by keeping them in stables that are properly ventilated. A very judicious precaution was adopted, some years ago, in the army, by order of his royal highness the commander-in-chief, and would, no doubt, be found equally advantageous to all those who keep many horses. This regulation consists in having every horse examined daily, by a competent judge of the disorder, and immediately separating such as have any symptoms of the complaint.

Having, for many years, witnessed the extensive ravages caused by glanders, I cannot but regret, that the legislature does not so far interfere in this matter, as to prevent persons from working horses that are decidedly glandered; particularly, from

keeping teams of glandered horses constantly travelling on the most public roads. This, I believe, is the case in many parts of the kingdom. It is by this misconduct, that the disease is so widely propagated, and so highly destructive.

The following instance of the extensive propagation of glanders at grass, in a large and excellent pasture, in the month of September, has occurred since the last edition was published. Sept. 1815, I was desired by an innkeeper, in Somersetshire, who keeps a great number of horses, to examine some that had symptoms of glanders. I was informed that some weeks (I forget how many) before the disease appeared, a person had left a horse at the inn that was said to have a cold and a discharge from the nostrils, and desired the landlord to keep him until he was sent for. He was turned into an extensive pasture with some colts and horses. When I arrived, there were no less than eight of them glandered in various degrees; some of them in the last stage. The hind or bailiff of John Ellis, esq., of Mamhead, Devonshire, had been riding a horse about the farm some time that had a running from the nose for some time; I was sent for to examine another horse that had been running at grass with him. I found the latter affected both with farcy and glanders in a

considerable degree; the former was decidedly glandered. Both these horses were destroyed, and soon after an ass, that had been running with them, was completely glandered.

In the summer of 1803, a young ass was inoculated with matter, in order to ascertain whether the horse from whose nose it was taken, was glandered or not; as he had not been weaned he was turned to grass immediately after with his dam: a short time after, both of them died of glanders.

A farmer, who had five horses, employed chiefly in carrying fire-wood to Exeter, and kept great part of the year at grass, desired me to look at them, as he believed one of them was glandered: I found the whole of them affected with the disease, but in different degrees.

From the preceding cases and experiments, I think it will be admitted,

1. That glanders are a contagious disease, and that the most probable manner in which it is communicated, is by swallowing or taking into the mouth the matter or mucus which issues from the nose of a glandered horse. From this it follows, that horses standing in a stable where a glandered horse had previously stood, even weeks before,

provided the stable has not been properly cleaned, is liable to be infected.

2. That horses have sometimes stood with such as are glandered, or in a stable where a glandered horse had before stood, without being infected; but that the number of horses escaping, under such circumstances, bears but a small proportion to that of those which become glandered.

3. That horses which do escape, when exposed to the contagion, are those of a hardy constitution, in the prime of life, and in good condition.

4. That glanders make their appearance at different periods after the horse has been exposed to the contagion.

5. That glanders may be produced by inoculation with the matter which flows from the nose of a glandered horse, or that which is contained in a real farcy tumour, or bud; and this may be distinguished by its happening in the course of a lymphatic, which is generally swollen, or corded, and was mistaken by Gibson for a corded vein.

6. That when a horse is inoculated with the matter of glanders or farcy, the first effect it produces is a peculiar kind of ulcer or chancre; from this proceed corded lymphatics, upon these farcy

buds arise, and ultimately the nose is affected with glanders. This last effect, however, takes place at different periods after inoculation, and the local and primary effect is more violent in some cases than others, and spreads more rapidly; this however does not appear to depend on any difference in the matter that is used, provided it be taken from a horse really glandered or farcied (for that of the mildest glanders has sometimes produced a violent effect,) but upon the state of the animal which is inoculated: young asses appear to be the most susceptible subjects.

7. That no kind of matter, whether healthy or morbid, or however acrimonious it may be, will produce an effect, in any degree similar to that of glanders and farcy. It is proper to mention here the result of three experiments made with matter taken from the heels of a horse labouring under confirmed grease; the subject from which the matter was taken is noticed in case 2. of the miscellaneous cases; the matter was thin, of a dark colour, and very fœtid. The animal was in considerable pain, and was not relieved by emollient applications. A small quantity of this matter was inserted under the cuticle with a lancet: two days after, a very painful small tumour appeared on the part, it increased and became more painful,

until the fifth or sixth day; about this time the skin appeared highly inflamed and disposed to slough, for the tumour was circumscribed by a dark red coloured line; here a separation took place from the surrounding skin: the mortified skin covering or composing the tumour sloughed off, leaving a healthy looking sore, which soon got well without any thing having been applied to it. Precisely the same effect was produced in three experiments.

8. That many instances have occurred of glanders ceasing spontaneously, as well as when the animal has been under medical treatment. The cases recorded, and so clearly described by Gibson, which I have already transcribed, are well marked cases of glanders; and he has very clearly pointed out the difference of the tumours or boils which appeared in the second case and those of farcy. But considering the length of time before the disease disappeared, and the inactivity of the medicine he employed; recollecting also, that they were carefully exercised, groomed, and fed, I am inclined to attribute their recovery to nature; assisted however, by wholesome food, regular exercise, and good grooming. The cases related by Mr. Smith are by no means decisive, because we are not so well satisfied of the horses being really

glandered as in the cases by Gibson; and besides, that gentleman's idea of the disease seems to be rather vague and indefinite. He has mentioned cases of glanders produced by blows on the head or nose, by a sabre wound, by a diseased liver and an obstructed mesentery. Allowing however, that in the cases he has adduced, the horses were really glandered, yet, as the medicines he has recommended have been so often tried without success by other practitioners, it is but reasonable to conclude, that his glandered patients owed their recovery to the same cause as Gibson's.

For many years I attended several glandered teams which belonged to different proprietors. These horses were regularly worked, and no attempt was ever made to cure them, except of lameness or other accidents which may have occurred. One of the proprietors did not take so much care of his horses as the other; but rather over worked them, and allowed them less food. In this concern I do not recollect one horse getting well; but in the other, there were several that, according to the waggoner's phrase, ran themselves dry, and continued in the team without having afterwards any appearance of the disease.

## CHAPTER XI.

### *On the Staggers.*

THE staggers are usually divided, by writers on Farriery, into two kinds, which they denominate the *sleepy* and *mad staggers*. The former are supposed to depend on too much blood flowing to the brain, and the latter on inflammation of that organ; and it has been observed, that, unless the sleepy staggers be removed, by copious bleeding and purging, inflammation of the brain, or mad staggers, is the necessary consequence: thus have these diseases been generally considered as nearly of the same kind, differing only in degree.

It has been clearly ascertained, however, that they are by no means similar in their nature; and, it has been incontestably proved, by examining the bodies of horses that have died of these diseases, that they arise from very different causes.

Some writers have imagined, that staggers resemble the epilepsy, or falling sickness, a disease to which the human body is liable. Something of this kind, though not exactly similar, happens, occasionally, to horses, and is termed *megrims;*

but in no respect does it resemble either the sleepy or the mad staggers.

The mad staggers generally attack horses that are highly fed and moderately worked; they do not occur frequently; may be easily distinguished from sleepy staggers; and are less difficult of cure, if attended to at an early period.

The sleepy staggers are a disease of far greater importance, and, next to glanders, perhaps, more destructive than any other. I have thought proper to call it the stomach staggers, because this important organ has been almost invariably found, after death, to have been the seat of the disease.

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## *On the Mad Staggers.*

This is not a very common disease, and may generally be cured, if attended to at an early period. In the mad staggers, the horse becomes highly delirious, and so violent, that it is often dangerous to come near him. Sometimes he falls down, and appears to be quite exhausted; but, after a short time, he suddenly rises, and becomes as furious as at first. The only remedy for this disease is copious bleeding; but it is generally difficult to

keep the horse sufficiently quiet to perform this operation: it is better to wait until a short intermission takes place, when he becomes exhausted by the violence of his exertions; both temporal arteries should then be opened, and suffered to bleed until the horse becomes faint, and is perfectly composed. After this, a strong dose of purgative medicine should be given, a rowel placed under the jaw, and a blister applied to the head: the horse's diet should be low; and, if any symptoms of the disease again make their appearance, the bleeding should be repeated, until they go off.

The bleeding from the temporal artery may be stopped by means of a pin and tow, as in the neck. It is necessary, however, to make use of a longer pin, and to take care that the ligature is tied very firmly.

When no person present is capable of opening the temporal artery, he should be bled in the neck, on both sides; a cord should then be tied round the neck, below the opening in the veins, so as to keep up a constant flow of blood, but the cord must not be applied until the vein has been opened. The only criterion, by which we can judge of the quantity of blood necessary to be drawn, is the cessation of the delirium, which seldom happens until a considerable quantity has been

taken off. This will be seen from the cases subjoined to this chapter.

It is proper to observe, that the operation of the purgative may be hastened by injecting clysters, composed of about a gallon of water, in which half a pound of salt has been dissolved; and, if it does not operate in the usual time, that is, from twenty-four to thirty hours, another dose should be given.

### CASE I.

A troop horse was attacked with mad staggers, and was bled freely from the jugular vein; the horse became more quiet, but not perfectly composed. The next day, he was highly delirious, and plunged about the stable so violently, that no one could come near him; sometimes a short intermission occurred, that is, he would lie quiet a short time, then, rising suddenly, he became as furious as at first. On the evening of the second day, I saw him for the first time, he was lying perfectly quiet, and was supposed, by the persons present, to be dying: I immediately opened both temporal arteries; and, after losing a considerable quantity of blood, he got up, was perfectly composed, and had no return of his complaint.

CASE II.

A young, healthy carriage horse, that had been highly fed, and done but little work, was attacked with mad staggers: the delirium ran so high, that he leaped through a small window, nearly five feet from the ground. This horse was copiously bled, took a strong purgative, and had a rowel under the jaw. He perfectly recovered, and had no return of the complaint.

CASE III.

A troop horse was attacked with mad staggers, and, though relieved by copious bleeding, and the other remedies above mentioned, after a few days the disease terminated in death. On examining the brain, a bony substance was found in its ventricle, or cavity.

# CHAPTER XII.

## *On the Stomach or Sleepy Staggers.*

In the sleepy staggers, the horse appears drowsy, hangs his head in the manger, and refuses his food. The tongue and mouth are of a yellowish colour; the membrane, which lines the inner surface of the eyelid, is more deeply tinged with yellow, approaching to a deep orange colour; there is a slight convulsive motion, or twitching of the muscles of the breast; the fore legs appear suddenly to give way, at times, as if the horse would fall: but this very rarely happens, and he very seldom lies down, unless the disease is going off, or death is approaching. The pulse is never affected in the early stages of this complaint. It is always attended by costiveness; and, when the dung is drawn off, by introducing the hand into the gut, it is found to be hard, and of a dark colour, often covered with mucus, or white slimy matter. Sometimes there is a suppression of urine, which appears to arise from a paralytic state of the bladder: this, however, is seldom the case, in the early

stages of the complaint. The temperature of the body is generally the same as in health; but, in violent cases, and in the later stages of the complaint, there is often profuse perspiration, and coldness of the legs and ears: in some instances, one half the body has become cold and palsied.

I have often observed, at the commencement of this disease, and some time after, that the horse appears to be roused, and neighs, on opening the stable door. In the later stages of the disorder, the jaws often become locked, and sometimes the muscles of the eye are convulsed. When a horse is attacked at grass, he is generally found forcing his head against the hedge; and, if removed from this situation, he moves forward, rambling, as if in constant danger of falling, until he meets with some obstacle, against which he forces his head, so as to cause considerable swelling in the prominent parts above the eye and in the nose. When in the stable, the horse will, sometimes, even force his nose between the rack staves, and generally bruises himself considerably about the head, which often causes a discharge of matter from the nostrils. In short, he appears totally insensible; but there is never that furious delirium, by which the mad staggers are characterized, nor is it difficult to bleed, or perform any operation upon him,

that may be required. When the disease terminates fatally, it is generally on the second or third day: a short time before death, there is often considerable convulsion, and the animal appears to be in great pain; probably from inflammation having taken place in the stomach or bowels.

A disease, very nearly resembling the stomach staggers we have here described, has, at times, proved highly destructive, particularly in the neighbourhood of Swansea, where a great number of horses are employed in the mines: it appears, however, to be a more violent form of the disease, and is probably contagious. The following is the copy of a letter I received from a gentleman, who had many opportunities of seeing this violent form of the disorder; and it will appear, from the letter, that he has taken great pains in investigating the nature of the disease; and that he has observed all the circumstances connected with it with attention and accuracy.

"SIR,

"Permit me, though a stranger, to address some observations to you respecting the disease, which, in the Appendix to the first volume of your Veterinary Medicine, is called *Stomach Staggers*. I have never seen any mention of it in

any other treatise, nor have I known any particular name given to the disorder before, though I have seen it rage, with the most destructive violence, in the neighbourhood of Swansea, in Glamorganshire, where it is called the distemper. For a long series of years, it has been the object of inquiry; but it has never been investigated, on the spot, by any one having a scientific knowledge of the diseases of horses, except Mr. Rickwood, of Brighton, who was sent down, some years ago, when the disease raged most violently, by a gentleman, who owned a very large number of horses; but he was not successful. Permit me now to say, that I do not think you have seen the disorder raging with the violence, or to the extent it has frequently raged near Swansea; its commencement is dreaded like the plague. I will endeavour to give you as succinct an account of it as I can; and, when I return into the country, where all my memorandums on the subject are, I will, with pleasure, if you wish it, send you every particular I have; though I can sufficiently depend upon my memory to say, that I can now send you the substance.

"The symptoms you mention are exactly such as occur, and the distinction you point out, between the brain staggers and the stomach staggers, is distinctly correct; for, though the yellowness of

the eyes and mouth has generally escaped observation, I have a memorandum, particularly noticing, that a man, in giving a ball to a horse, in this disorder, had his hand tinged quite yellow; and, I have no doubt, it generally occurs. But, besides the symptoms you mention, the animal is subjected to a general convulsive affection; frequently attempts to stale, and discharges a little urine at a time, by shoots, as if convulsed; and most commonly, the animal's jaw is locked, some time previous to his death. Having now stated the immediate symptoms, I will give a succinct history of the disorder, as it raged near Swansea.

"The earliest account I have of any particulars begins about the year 1782; but, I know, it has, at times, visited the neighbourhood, ever since the year 1760. It generally begins to rage between July and the end of September. The cold weather, in winter, has generally stopped it; but, the last visit it made us, it continued two entire years. In one year, a neighbour of ours lost more than a hundred horses by it; and the next year, we lost about thirty. It attacks both sexes, and every age, indiscriminately; but animals at grass, in high condition, and at easy, or no work, appear to be most subject to it, and to have it with more violence. Till the last time it visited us, animals

kept in a stable were considered as protected from it; horses kept in the mines, underground, had never had it. I made a stable in one of our underground works, to remove all our horses; but, before I carried this plan into effect, the disease began to decline. At the height of the disorder, horses seldom or never recover. When an animal does recover, it is considered as a favourable prognostic, and we look for a delivery from this plague. The animals at grass are most liable to it; but such as are kept in a stable, and under the best management, are also subject to the disorder. In the year 1801, or 1802, when it last raged with us, I lost a valuable horse, that was perfectly well groomed; but I shall have to make some observations on his case, when I mention the dissections, and the apprehensions I have of the disorder being contagious; which I shall now proceed to do.

"The appearance and state of the stomach are generally such as you have described; but, in the valuable horse before mentioned, and a few others, which died of this disorder, it was not the case.

"I beg here to observe, that I had been very strict in my stable regimen, and particularly in the quantity, quality, and time of giving food and water; and I attribute the emptiness of the stomach to this cause: though I did not prevent the disease

by this precaution, it made all the symptoms milder. I am not a surgeon, or a scientific man; but, in examining the bodies of horses, after death, I have been assisted by a surgeon; and have generally found, with the exception of the loaded stomach, and a slight inflammation, for a small length below the pylorus, (the lower orifice of the stomach, from which the digested food passes into the intestines,) and, sometimes, a little repletion in the vessels of the brain, every part free from disease.

"I could not, for a long time, believe that the disease was contagious: I now fear it is most highly so; but do not think, that this circumstance has been proved. When the disorder last began, a neighbour, who had lost a great many horses by it, sent a parcel of their skins, to a neighbouring town to be sold: the horses that drew the waggon, in which they were conveyed, were the next, and that in a short space of time, that fell victims to the disorder. Horses that had been in the stables where the disorder raged, were sent to work underground; there, also, the disorder soon after made its appearance, for the first time. Our neighbours firmly believe it is contagious: they took every precaution to prevent contagion, and the disease left them. I was incredulous, and, at this time, we had not suffered: a horse from their neighbour-

hood came to graze in some fields through which some of our horses passed; he died of this disorder, and was left unburied. From this moment, the distemper began with us; but not knowing the circumstance of the horse remaining unburied, I took no precaution to prevent contagion. The valuable horse before mentioned was taken ill the next day, and soon died. He had been at a neighbouring fair, and was left under the care of a man, to hold, while I did my business: I do not know that he had any communication with other horses, but suppose he must. The common farmers' horses, in this neighbourhood, are all badly managed: yet I have known those who take proper care of their horses, who do not overwork them, and even those who keep them at grass, lose all their horses, when their less careful neighbours lost none. I have known a man lose his whole stock twice in one year. When I began to fear contagion, every horse, that died of the distemper, was buried without being skinned. We have had no return these five years.

"*Causes of the Disorder.*

"In the mild form, in which, it appears to me, you have seen the disease, I think the causes you

assign sufficient; but, (except as to some poisonous quality in the food,) I cannot think them to be the cause with us. I strongly suspect it arises from some poisonous plants in our pastures, which, perhaps, flourish only, to a poisonous extent, at some particular times, and which have not hitherto been detected. I have mentioned our horses having been attacked the year following our neighbour's great loss, and when they were free from it: most of our horses were purposely kept in the stable; and I have some idea, that they were fed upon hay of the same year that our neighbour's horses were fed upon the preceding year: could this fact be ascertained, it might lead to a discovery of the real cause of the disorder. I suspect the poison acts by paralyzing the stomach, that its fullness is a consequence, and not a cause, of the disease. Mr. Coleman was consulted by our neighbours, at an early stage, during the last attack we had, and I have a copy of a letter from him upon the subject. I have also a copy of Mr. Bond's opinion upon a statement made to him; but neither of them ever saw the progress of the disorder with us, and they do not appear to me to have thrown any light upon the subject.

"I shall be much flattered, if my communication affords you any information you may think

worth notice. If you wish an explanation of any thing I have stated, I shall be happy in endeavouring to give it.

"I am," &c.

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*March* 7, 1811.

"SIR,

"Since I wrote you, in London, I have reviewed my papers, and I do not see reason to alter any thing I have said in the letter you refer to my having written about two years ago, and of which I have kept a copy; but as you have made some inquiries respecting the disorder of my own valuable horse, and his treatment, I send you the fullest account I have of it, and some observations made by Mr. Collins, an intelligent surgeon at Swansea, to whom I communicated the particulars of the case at the time. They are as follow:

"*March* 2, 1802.—My own riding horse, in high condition, and capitally groomed, lost his appetite: having a cough, it was supposed to be from cold.

"*March* 3.—He was blooded. His blood was considered as in a bad state; (note, I did not see the blood, nor do I know in what respect it was considered as bad). When led out, he seemed stiff; and when taken in again, he ran first against

the stall, then against the rack, as if he did not see. He then had rather a strong dose of aloes, and a pint of olive oil; he then became violent. At four o'clock, I came in: he was extremely ill, but did not seem to me to have any appearance peculiar to the distemper: he had just staled freely. Between nine and ten, he fell, or lay down: between twelve and one, he died. Early in the afternoon, the groom observed, that the near ear was quite cold; the other temperate. Our farrier said, the whole of the near side was cold two hours before he died. His jaw became locked about the same period. I did not see him after four o'clock.

"Upon opening the body, the appearances were altogether healthy: no inflammation of any part; no distention of the stomach; the food quite moist; the brain uninjured."

*Extract of a Letter from Mr. Collins.*

"I am very sorry to find you have lost your favourite horse, and I am much inclined to think, with the farrier, that it was apoplexy, or palsy. Was the state of the brain examined?—I do not think it was the distemper. Palsy frequently succeeds apoplexy, from the pressure of extravasated blood in one hemisphere of the brain. He cer-

tainly died paralytic, as appears from the coldness of one ear, and failure of circulation on that side."

"From a letter I wrote to Mr. Rickwood, some time afterward, detailing our losses, and of which I have a copy, I find I considered the case as anomalous; but, upon the whole, I am disposed to think it was a peculiar form of the same disease, which we have, in this country, denominated the distemper. I have suspected, that the distention of the stomach with food has arisen from a paralysis of the stomach, so that food conveyed there remained immovable. If it arise from a poisonous quality in the food, this may be the way it acts.—We have not had any return of the distemper since 1803.

"To enable you to judge, and form an opinion from facts, I shall send you by the mail from Swansea, in a parcel, a statement of a variety of cases, by Mr. Collins, whom I have named above; and I also send you some memoranda of cases and observations made by myself at the time they are dated. I shall be very happy if they tend to throw any light on the subject.

"As I have not any copies of these papers, and I have not time to have them copied, I have to request, that you will return them to me in a par-

cel, directed to this place, so soon as you shall have done with them. If they should suggest any thing, which may lead you to make any farther inquiries, I shall be happy in endeavouring to procure you any farther information you may desire.

"I am, Sir," &c.

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The following is a copy of some observations made by an intelligent surgeon, who had many opportunities of seeing the disease, and carefully examined the bodies that died of it, in the year 1800, at which time the disorder was prevalent:

"In 1786, the distemper appeared in June, and continued during July, August, and September.

"In 1787, it began in July, and continued during August, September, and great part of October.

"In 1786, the summer was wet. In 1787, the spring was wet, but the summer warm, and a very luxuriant crop of latter grass. In 1800, the summer was unusually dry and hot: great crops of hay, but no after grass. Horses of all ages, and of both sexes, were equally liable to the distemper. More horses were attacked at grass than in stable. Idle and working horses were affected; but more

of the former, particularly when in high condition: in these the disorder was more violent, and very few recovered.

"*Causes.*

"Not known. In 1787, the disease was attributed to the luxuriance of the after grass; but this year, there is none. The water of the river was supposed to have some bad quality; but upon being analysed, nothing of the sort was discovered.

"*Authors.*

"None treat of it accurately; but a disease described in Wood's Farriery, published in 1762, nearly resembles it.

"*Symptoms.*

"Heaviness, stupor, laziness at work, swinging the head from side to side, or pushing it forward, or resting it in the manger, but never turning it round, or drawing it backward; often standing for hours motionless; then slight twitches of the limbs, and other parts of the body. They seem weak, and afraid of falling. Heaving of the flanks. Ears cold. Eyes glassy. Some grow mmediately stiff, and the jaw is frequently locked.

Some beat their heads about, and kick out at every thing; but are never observed to kick their bellies, as in gripes.

"*Progress.*

"The first symptoms increase; beating the head against the ground or manger; often forcing the nose through the bars of the hay racks. The jaw becomes closely locked. They fall. The twitching increases. Violent perspiration breaks out in some: in others, the skin is dry and tight, the eyes open and staring, yet the horse appears to be blind. He makes water frequently, which is forced out, as if by a general spasm.

"*Fatal Symptoms.*

"The coldness and stiffness of the whole body increase. The loins extremely pinched in. The eyes very glassy. The jaw closely locked. Dung very dark and dry.

"*Symptoms of Recovery.*

"Very few recovered: in these, the coldness of the ears and body lessened; the jaw became relaxed; convulsions abated; the eye appeared more lively; staling less frequent, and without

appearance of spasm; they attempted to eat and to drink; the dung became moister, and of a light colour. Out of fourscore, only four were supposed to have recovered. One of these, being turned out, ran round the field several times, then fell, and died. Another seemed to have been relieved by profuse bleeding.

"The disease is not discovered till the case is become desperate, and usually kills in twenty or thirty hours. Almost every remedy has been tried without effect; *viz.* bleeding, hot baths, calomel, purging medicine, salts, opium, camphor, James's powder, and asafœtida. None of them appeared to be of service."

Six horses, that died of the distemper, were examined by this gentleman. In four of them, the stomach was loaded with food, and much distended; in one, the stomach was nearly empty, but the large bowels were loaded; in another, there was not much distention of the stomach, but the large intestines were loaded, and the rectum, or last bowel, full of hard dung. In all of them, the lower part of the stomach was more or less inflamed; and in some, the intestines also, as well as the membrane which covers them, and by

which they are connected together. From the observations of those gentlemen, it appears, that the disease, which has, at times, proved so destructive in the neighbourhood of Swansea, bears a striking resemblance to that I have called *Stomach Staggers*, and is probably the same disease in a more violent degree. That the principal seat of the disease is the stomach, has been clearly proved, by examining the bodies of horses that died of it: in every instance that has come under my observation the stomach was excessively distended; but the brain was perfectly free from disease. The stomach and intestines were, generally, more or less inflamed; but it was evidently in consequence of the excessive distention of the former. With respect to its being caused by some poisonous plant, an opinion suggested in the foregoing letter, and in the Treatise on Veterinary Medicine to which that gentleman alludes; though it has, at first, an appearance of probability, it certainly does not sufficiently explain the disease. I have known a horse at grass violently attacked with staggers, of which he died: other horses were immediately afterwards put into the same field, without contracting the disease. In several instances, the disorder has occurred to a horse, that has been kept with many others, all feeding from the same hay,

without affecting any of the rest. Some years ago, in a large village and its neighbourhood, near Bath, the disease was very prevalent, and destroyed a great number of horses. It was usual, in this place, to give a considerable quantity of chaff, or cut straw, to the horses. After some time, it was conjectured, that the disease might have been caused by the horses feeding greedily on chaff. This mode of feeding was discontinued; and since that time, they have had no return of the complaint.

According to my experience, the staggers more frequently attack old horses, that have been worked hard, than such as are young and fresh. They have more frequently occurred to horses employed by little farmers, where they are coarsely fed, and often worked hard, than to such as are properly managed. In a large waggon concern, where I have for many years attended the horses, I have never seen a single case of stomach staggers: in two other concerns, of the same kind, several cases have occurred. In the former concern, I had an opportunity of observing, that the horses were, in every respect, extremely well managed, and not overworked; but I had no opportunity of seeing how the others were treated.

I had the honour of serving, as veterinary sur-

geon, in the royal dragoons, seven years, during which time there did not occur a single case of stomach staggers, nor have I ever heard of a case in any other regiment. I recollect one case of distended stomach, which occurred in the seventh dragoon guards, while at Canterbury, which, though the symptoms did not strictly resemble those of stomach staggers, it may be useful to describe. A young horse had taken a moderate dose of physic, which on the second day had not operated; but he was seized with violent pain of the bowels, as it was supposed, which rapidly increased, and when I saw him was so considerable, that the poor animal was unable to stand, but was struggling violently, and appeared to be delirious. The same evening, or in the night, he died. On examining the stomach, it was found greatly distended with bran mashes, containing but little moisture; the dragoon having imprudently given as much he chose to eat. In short, it appears that this disease depends on the stomach becoming torpid, or losing its energy, in consequence of a horse's feeding greedily, and particularly when his food is of a bad quality, and difficult of digestion. Such is the connexion between the stomach and the brain, that, when the former is thus loaded with food, and incapable of digesting it, the latter is necessa-

rily affected, and the symptoms produced are such, as would lead a person, unacquainted with the subject, to imagine, that the brain was the original seat of the disease. With respect to that acute form, which the staggers assumed in the neighbourhood of Swansea, I can readily conceive, that the stomach may become torpid, or have its natural energy so diminished, by various causes, as to produce all the symptoms by which the disease is characterized. I do not think it probable, that it is caused by any poisonous vegetables among the hay or grass, from the circumstances before stated; but this matter should be carefully investigated, when the disease again occurs in that neighbourhood; for, if any such plant could be discovered, it would lead, perhaps, to an effectual mode of prevention. As to the cure of staggers, I believe there is little chance of it, unless the disorder is attended to at an early period. The stupor and heaviness of the head naturally lead us to expect relief from copious bleeding. Dissection, however, has proved, that the brain is not inflamed, or overloaded with blood; and, in numerous instances, the most copious bleeding has been found ineffectual. In every case, except one, where purging has been brought on, the horse has recovered. (See case 3.) When the disease had continued

three or four days, and the treatment here recommended had been adopted, I have, in three cases, observed, that the stomach had discharged its contents in some measure, and that the large intestines were excessively loaded: it appeared, indeed, that purging would have taken place in another day, had the horses lived so long.

### *On the Treatment of Stomach Staggers.*

As soon as this disease is observed, let the purging ball be given, and washed down with a little warm water; let the hand be introduced into the gut, and all hard dung, that may be found, removed. The following clyster is then to be injected:

CLYSTER.

| | |
|---|---|
| Hot water . . . . . . . . | 1 gal. |
| Common salt . . . . . . | $\frac{1}{2}$ lb. |
| Olive oil . . . . . . . . . | 4 oz. |

Mix.

Give the horse, every hour, a pint of warm water, with half an ounce of compound spirit of ammonia, and let the clyster be repeated three or four times. Twice a day, add to the warm water

and spirit of ammonia two drams of finely powdered cascarilla. These remedies (except the purging ball) must be persevered in till purging comes on. I am not convinced, that bleeding is necessary, except when the horse is violent; yet I have always had recourse to it; but never with any apparent advantage. In two cases, the horses were bled profusely, without causing an abatement of the symptoms. When we are so fortunate as to bring on a purging, it is probable the horse will recover; and, when the purging has become considerable, and the horse appears to be relieved, looking more lively, and showing an inclination for food, he should take frequently a small quantity of good gruel; but no hay or corn should be allowed for two days, or until the stomach and bowels are perfectly unloaded. By a proper perseverance in this treatment, I have, in several instances, succeeded; but it is necessary to attack the disease at its earliest period; for, when the stomach is distended to a certain degree, its power is irrecoverably lost.

### CASE I.

A waggon-horse was attacked with stomach staggers. When I saw him, he was quite insensible, and had all the usual symptoms; the pulse

exactly the same as in health: he took the purging ball, and, immediately after, a pint of warm water, to which were added four ounces of tincture of asafœtida. Clysters were injected several times a day, and the warm water, with the spirit of ammonia, was given frequently: the following day, he was worse; the purging ball and clysters were repeated; but he continued to get worse, and, during the night, died. The purgatives and clysters had not removed the costiveness. The horse had been bled, also, from the temporal arteries, and from the jugular vein, to a considerable extent, without appearing to be, in the least degree, relieved by it.

The stomach was distended to an immense size, and full of undigested food, consisting chiefly of oats and beans, great part of which had been swallowed unbroken. There was some appearance of inflammation about the stomach and first intestine; but this evidently proceeded from the excessive distention of the stomach. The brain was, in every respect, perfectly healthy.

### CASE II.

A horse, employed in a brewery, and fed upon oats and hay, was attacked with symptoms of

stomach staggers: in this case, however, the horse was violent at times, so that it was difficult to give him medicine or clysters. He was bled freely, from the temporal artery, and was treated as in the former case, except that no asafœtida was given. On the second day, he appeared rather better; and in the afternoon, he began to dung freely; towards evening, a purging took place. The next day, he was quite well, and has had no return of the disease.

## CASE III.

A waggon horse had the stomach staggers: he was bled from the temporal artery, took the purging ball, and was clystered three or four times a day: in short, he was treated in the manner before described. The following day, the horse being still costive, one half of the purging ball was given, and he was again bleed freely; in the afternoon, he began to purge, and appeared rather better; but the next morning, he grew much worse, though he still continued to void soft dung. This circumstance led me to suppose, that inflammation of the brain was coming on, particularly as the horse was unusually restless, and appeared, in some degree, delirious: he was, therefore, bled

largely, from the temporal artery, had a rowel placed under the jaw, and the head was blistered: at night, he died. On opening the body, I was astonished to find the stomach loaded with hard undigested food, as the horse, during the last day, had dunged freely. It appeared, from this, that the purgative had passed into the bowels, without causing the stomach to discharge its contents, where it acted in the usual manner: this is the only way in which I can account for the purging.

### CASE IV.

A waggon horse had the stomach staggers, and was treated in the usual manner. On the morning of the second day, the purgative was repeated, and the other remedies persevered in; during the night, he appeared to be griped; but at length he began to dung freely, and appeared much relieved; he continued to discharge large quantities of dung, which appeared to consist, in a great measure, of undigested oats and beans, and had a very offensive smell: he was considerably relieved, and seemed to have an inclination for food; but he was allowed to take gruel only. The horse had so bruised his head and nose, by forcing it against the wall and manger, that there was much swell-

ing above the eyes and about the nose; there was also a discharge of matter from the nostrils. The horse perfectly recovered, and had no return of the disease. It is of importance to remark, that, in this horse, as well as in that of case 2, the disease was noticed at any early period; and I have reason to believe, that they were more strictly attended to by the servants, to whose care they were intrusted, than horses, in this complaint, usually are.

### PURGING BALL.

| | |
|---|---|
| Barbadoes aloes, powdered . | 1 oz. |
| Calomel . . . . . . . . . . | ½ oz. |
| Cascarilla, finely powdered . . | 3 dr. |

Sirup enough to form a ball for one dose.

Some years ago, I gave two drams of the carbonat of ammonia, with the above ball, and employed a smaller dose of calomel. The formula I have here given, however, appears to me to be the best. The ball should be given without paper, and washed down with two or three hornfuls of warm water. The mode of treatment I have recommended is, I believe, the most effectual that can be employed: there is but little chance of

success, however, unless it is resorted to at the commencement of the disease. It is probable, I think, that the same treatment would be found useful in that acute form, which the disorder occasionally assumes, as described in the first letter, and the observations which follow it. It is there stated, that purging medicines and calomel were given without effect, that is, were given separately, and the latter, probably, in a small dose; but it does not appear, that the medicine was assisted by the means I have recommended, that is, by clysters, and by giving frequently warm water, joined with a powerful stimulant, to soften the undigested food, and excite the stomach to action. With respect to the valuable horse mentioned in the letter, in which, after death, the stomach and bowels were found in a natural state, it appears to me, that he died of some other disease, the symptoms there described being unlike those which occur in staggers. My experience leads me to believe, that the staggers are not contagious; but the circumstances, stated in the foregoing letter, seem to confirm the opinion, that they were highly contagious in the neighbourhood of Swansea.

## *Additional Observations on Stomach Staggers.*

In the Veterinary Dictionary I published a short time since, there is a disease described under the head *Lethargy*, the symptoms of which nearly resemble those of stomach staggers. For this description, I am indebted to Mr. Poole, an intelligent farrier who resides near Wells. He says, that before the moors were enclosed in the district where he resides, lethargy frequently occurred, and destroyed more horses than any other disease; and that since they have been enclosed the disorder is scarcely known. He attributes the disease to their eating a plant named *ragwort*; by Culpepper, *staggerwort*, or St. James' wort; and by Linnæus, *senecio Jacobæa*. The following is his description of the symptoms: "Standing in one place three or four hours, while others were feeding; gaping several times without intermission; resting the chin on a gate, stile, or manger; or pushing their heads against a tree or post. The urine and dung in small quantity, the latter often with slime on its surface; at length rambling about, catching here and there a mouthful of grass, till at last they terminate their life in a ditch, pond, or river. Bleeding in the usual quantity," he says, "was sure

to prove fatal." It was generally considered incurable, but he cured one with beer and ginger, and another with snakeroot, mustard, saffron, compound spirit of lavender and ginger. "In the next parish moor, where this herb abounded, and where many cattle were kept, cows were seized with this disorder, and died in the same manner: I never heard, on inquiry, of one cured. I lost two mares, and a colt of my own, in this disorder, which farmers called the *pope*. Sheep eat the ragwort greedily and are not hurt by it."

The symptoms here described seem to correspond with those of stomach staggers, except in the length of time it continued. It is to be regretted, that Mr. Poole did not examine the stomachs of the horses and cows that died; yet it seems probable, that, had the stomach been so distended as I have generally, indeed almost always found it in stomach staggers, it could scarcely have escaped notice; and with the stomach in such a state, one cannot well suppose that the animal could live so long as two months, as they sometimes did in the cases described by Mr. Poole.

Mr. Blaine, in his Outlines of the Veterinary Art, 2nd edition, considers the distention of the stomach merely as a consequence of a specific inflammation affecting it. "It appears to me," he

says, "that what has been regarded as a *cause* is a *consequence* alone; and that the distention of the stomach is a mere symptom of the complaint, but whose real nature seems to consist of an inflammation of that organ *sui generis*, differing from gastritis or simple inflammation of the part, as well as that brought on by the action of poison; though a morbid effect produced from something without (eating poisonous herbs) has been also hinted at as its probable source. In all cases that have been examined after death, one appearance was common to all, *an inflamed state of the lower part of the stomach towards its pyloric orifice;* but a distended state of the stomach was not always present: it is therefore not unnatural to look on that as a cause which always exists, in preference to that which, though common, yet is not invariably present." That a distention of the stomach by undigested food has not been invariably met with in horses that have died of staggers, must be granted; but in the few cases where it was otherwise, the large intestines have been loaded.

I do not think it improbable, that a certain state of stomach may exist, which, though not affecting the appetite, except in disposing the animal to eat food which he would otherwise reject, suspends or destroys the digestive power. He there-

fore continues to take in food, until the stomach is so distended, as to produce the symptoms which constitute stomach staggers. Whether this morbid state consists in a peculiar inflammation of the pyloric part of the stomach, in palsy, or any other specific condition of the organ, cannot well be determined by its appearance after death. I believe that the stomach is generally, perhaps always, found inflamed; the intestines also, are often in the same state, and sometimes the lungs (see case v): but it is not unreasonable, I think, to consider the distention as the cause, and not an effect of the inflammation, particularly as powerful stimulants have been found the best remedies.

In speaking of the contagious nature of staggers, Mr. Blaine says, "From the very clear and satisfactory statement of the disease as it raged near Swansea, and from what I have myself seen of it, I have no hesitation in considering it, in some instances, as a contagious epidemic. In minutes now before me of a correspondence where my opinion was required, it occurred during the spring, and attacked three horses out of five; the other two were removed as soon as the nature of the disease was understood, and thereby escaped. Other notes made by me of actual cases, and other correspondences relating to the subject, all tend

to confirm the opinion I have already stated. Nor does it at all go to weaken this argument that, it sometimes selects a single horse from among a number, the rest of whom shall all escape it. The same happens every day with typhus fever in the human subject, which is too notoriously contagious to need comment; and it is not attempted to be denied, that it is only under particular circumstances of malignity, that it does assume an epidemic and contagious form."

Though I have never seen the staggers in this decidedly contagious and epidemic form, I strongly advise the separation of the diseased horse from others, in whatever degree or form it may occur. The view Mr. Blaine has taken of staggers, and the consideration, I suppose, of its so frequently proving fatal, has led him "to throw out a hint to the experimental veterinarian, which is, that in any future instances of this complaint that may occur to him, but particularly where it should appear to exist in an endemial or contagious form, I would advise him to try the effects of arsenic internally administered, and I would do it on the following grounds. This poison, there is reason to believe, does not exert its baneful influence wholly by its caustic qualities, but it excites a specific inflammation on the stomach; one prin-

cipal proof of which is, that it will act equally through the medium of the blood vessels. If this is the case, from analogy we are warranted in concluding, that no better remedy could be devised, than one wherein we are enabled to pit one specific inflammation against another; under which treatment, from what we see in cases something similar, we might hope for a beneficial result. As the disease is a desperate one, and no efficient means are at present known to combat it, this may be worth the trial." Though in a few instances I have had the good fortune to treat this disease successfully, yet in by far the greater number it has proved fatal. It should be considered, however, that the veterinarian is seldom consulted until the disorder has made some progress; the stomach, therefore, may be often irrecoverably injured, before his remedies are applied. But if the treatment I have suggested be found, upon a fair and early trial, ineffectual, it would surely be worth while to try arsenic. The peculiar effect which *hellebore* seems to produce on the horse's stomach would, upon the same principle, induce me to give it a trial. See experiment 12, Miscellaneous Experiments.

Mr. Blaine's long and extensive experience in the diseases of dogs, and the numerous opportunities he has had of examining rabid animals after

death, has led him to offer the following observation in support of his opinion relative to the nature of stomach staggers. "I was first disposed to regard this matter in the novel point of view it is now placed in, from observing the effects of an inflammation (evidently specific) of the stomach in other animals, but particularly from what occurs in the rabies, or, as it is popularly termed, madness of dogs: for whoever will be at the pains to inform himself, by an attentive observation of the symptoms while living, and of dissections of rabid canine subjects when dead, will find that this malady unquestionably consists in an inflammation specific and *sui generis*, principally affecting the stomach of the animal: and though the inflammation is not in rabid dogs, nor in other brutes, confined to this organ alone, but extends also in some cases to the bowels, and in others to the lungs; yet this very circumstance rather tends to strengthen the proofs I would draw from it: for when the lungs form the principal seat of the complaint, the symptoms are always more violent, or rather the manners of the animal are so: and it is from these cases, and these only, that this fatal malady has derived the popular name of madness; but when on the contrary the inflammatory attack is principally spent on the stomach and bowels, it pro-

duces symptoms very similar to what occurs in stomach staggers. And it is worthy of remark, that the analogy holds good still further; for in almost every rabid dog, who dies under that stupid drowsy kind called *dumb madness*, there is present also an enormous distention of the stomach from substances taken in, and here likewise the inflammation is usually greatest at its large curvature and pyloric orifice. This distended state of the stomach in the rabid dog is so very common, that it may be almost regarded as an unerring characteristic of the complaint: and it appears that the disposition thus to fill the stomach is actually dependent on the peculiar inflammation of the part, and that alone; for idiopathic gastritis is sometimes seen, and the inflammation produced by mineral poisons is sufficiently common; but in these no such disposition is observed; whereas in the specific inflammation produced by rabies, there is a peculiar and almost invariable disposition to distend the stomach, sometimes with food, but more commonly with other substances. And it appears to me, that this uncontrollable desire, (the effect of morbid sympathy) is simply to fill the stomach; the sensation of hunger having no part in it, and therefore after death, in almost every one of these cases, an enormous mass of undigested anomalous

matter is found within it, composed of every trash that comes in the way of the animal. Exactly the same, I conceive, occurs in the horse, the specific inflammation of whose stomach excites him by a similar morbid sympathy to take in a large quantity of food; the paralytic state of which prevents its contracting on its contents; consequently though this distention is not the original cause of the complaint, yet it will greatly aggravate the distress and urgency of the symptoms."

Mr. Blaine's observations on this subject are certainly interesting, and in a practical view would be highly important, could any well marked symptoms be pointed out, by which this peculiar state of the stomach is indicated. It unfortunately happens, however, that in stomach staggers the distention has already taken place, and the horse very rarely has any appetite or inclination to increase the load in the stomach; that is as far as my experience goes; nor did I ever hear it remarked by those who have lost horses from the disease, that they appeared to feed voraciously and indiscriminately previous to the attack. But whenever the disease occurs, and particularly in the serious form in which it happened at Swansea, Mr. Blaine's observations should lead us to be very careful in feeding such horses as have escaped

the attack, both with regard to the quantity and quality of their food, as an additional precaution to that of separating them from the diseased subject: a dose of physic also would probably be useful.

## CHAPTER XIII.

### *On Inflammation of the Lungs.*

This is a disease, which requires the most prompt and efficacious treatment; for, so rapid is its progress in the horse, that, unless checked at an early period, it generally proves fatal. Inflammation of the lungs is sometimes preceded by shivering; soon after, the horse appears dull, and refuses his food. He breathes quickly, which is seen by the motion of the flanks. The pulse is unusually quick, beating from sixty to eighty in a minute; whereas, in health, it is only about forty. On lifting up the eyelid, the membrane underneath will generally be found very red. If proper remedies be not employed, the disease rapidly increases; the breathing becomes quicker and more laborious, the pulse increases in frequency, and is more difficult to be felt in the arteries; but, by applying the hand to the left side, near the elbow, the pulsation of the heart will be distinctly felt; the legs and ears become cold; and, in two or three days, the animal dies. The treatment commonly pursued by far-

riers often protracts the disorder, so that the horse lives several days, or a week. They generally take off a moderate quantity of blood, which affords some relief, and give some stimulating or inert medicine, in the form of what they term a comfortable drink. The bleeding is often repeated, in small quantity, the second day, and sometimes the third: this prevents the disease from proceeding so rapidly as it otherwise would; and, when the horse dies, we generally find a large quantity of yellowish fluid in the chest.

The only remedy to be depended upon in this disease is copious bleeding, which must be repeated in six hours, if the symptoms do not abate. Blistering the sides, rowelling the chest, and giving the following ball, may be useful auxiliaries; but bleeding is the essential remedy. As to the quantity of blood necessary to be drawn, we are to be guided by the effect it produces; that is, the bleeding should be continued until the horse becomes faintish. The second bleeding, should it be found necessary, is to be governed by the same rule; but it is probable, that faintness will then be produced by a smaller evacuation.

After blistering the sides, give the following ball, which is to be repeated every morning and evening,

until the horse's staling is considerably increased. One ball daily will then be sufficient. Clysters are to be injected morning and evening, consisting of one gallon of warm water, half a pound of salt, and four ounces of olive oil. A cool stable, properly ventilated, is essentially necessary. In summer, horses have been turned out apparently with good effect. When the horse begins to feed, grass or bran mashes will be most proper for him. He must be brought to his usual diet very gradually.

There is a disease, which is generally considered as inflammation of the lungs, and prevails most commonly in the spring of the year, particularly among young horses. It differs, however, in some respects, from that disease; and, if improperly treated, often terminates fatally. On opening the bodies of such horses, the lungs will be found to have suffered much from inflammation, and there will be a large quantity of yellow fluid in the chest. It may be inferred, from these appearances, that the same copious bleeding we have just described would be necessary in these cases also. Experience, however, has taught me, that, though bleeding is highly necessary at the commencement of the disorder; yet, when it is repeated with free-

dom, after considerable debility has taken place, and this very soon happens, death is commonly the consequence.

I would distinguish this disease by the name of catarrhal inflammation of the lungs; for, though these organs are always found highly diseased in horses that die of this disorder, it is probable, that the parts principally affected, at first, are the membranes which line the windpipe and throat: this is often relieved by a copious discharge of mucus, resembling matter, which is discharged through the nostrils; but, by improper treatment, and, in some cases, under the best management, the inflammation gradually spreads to the lungs, and proves fatal.

This catarrhal inflammation of the lungs differs from that we have before described, in being accompanied with a weak cough, and a tendency to discharge from the nose. The pulse, at the commencement of the disease, is not very quick; sometimes not more frequent than in health; but it is generally weak, and not readily felt. The eyes often appear dull; and, in some cases, the throat is sore, so as to cause difficulty in swallowing. Bleeding is generally proper at the commencement of this disorder; but if, after the operation, the pulse is found to be quicker, and more

feeble; and particularly if, when the horse is taken out of the stable, he appears very weak, which is easily perceived by his manner of walking, appearing to ramble in his hind parts, and moving his legs slowly and languidly: under such circumstances, it is probable, that the bleeding was improper, and that, by repeating it, the disease would terminate fatally.

That epidemic disease, which has at times raged among horses, and is commonly called the distemper, very nearly resembles that which we are now describing, and was generally cured by the treatment I am about to recommend for this disorder. The only criterion by which we determine whether bleeding is necessary or not, and to what extent it may be carried with safety, is the state of the pulse, and the appearance of the horse when taken from the stable. When considerable debility is indicated by his manner of walking, a corresponding weakness will generally be found in the pulse: under these circumstances, bleeding would certainly do mischief. But, when the horse is tolerably firm in his walk; the pulse quick, and, though small, yet hard, that is, when the finger placed on the artery is struck rather sharply; and the under surface of the eyelid appears red; copious bleeding is undoubtedly proper. When the disease does

not abate in consequence of bleeding, the propriety of repeating the operation must be determined by the state of the pulse and the animal's strength. The ball, that is recommended in the former complaint, may be given in this also, twice a day, so as to keep up considerable staling; but if the horse appears weak, and the pulse is not very frequent, two drams of powdered cascarilla should be added to each ball. If there should be any difficulty of swallowing, the throat should be blistered; the sides also should be extensively blistered; a discharge from the nose should be encouraged, by steaming the head, that is, by putting hot bran mashes into the manger. In summer, grass may be given; and, in fine weather, he may be turned out during the day, particularly when he appears to be recovering. When there is considerable weakness, good gruel should be given several times a day. Under this treatment, the horse generally recovers.

THE BALL.

| | |
|---|---|
| Powdered nitre . . . . . | 6 dr. |
| Camphor . . . . . . . . | 1 dr. |

Sirup and linseed meal enough to form a ball.

# CHAPTER XIV.

## *Inflammation of the Bowels.*

THE horse's bowels are very susceptible of inflammation; and, when inflamed, unless speedy relief be afforded, the disease generally terminates in death. Inflammation of the bowels may arise from various causes. The following, I believe, are those by which it is generally produced: 1. Drinking freely of cold water, when heated by violent exercise, particularly when such exercise has been continued some time; 2. Exposure to cold or rain, under the same circumstances; 3. Spasm of the bowels, or flatulent colic; 4. Improper doses of purgative medicine.

To the two first causes post and stage-coach horses are most exposed: they are not only likely to suffer from standing at the door of a public house, in cold stormy weather; for, if they escape from this, they are plunged, immediately after their return, into the nearest river or pond. Many horses, it is true, suffer this without injury; but that it sometimes causes inflammation of the bowels, and other diseases, cannot, I believe, be disputed.

When inflammation of the bowels is thus produced, it is often preceded by shivering; the horse then becomes dull, and refuses his food; the pulse is considerably more frequent than in health; the breathing also is disturbed, the flanks moving more quickly than usual; the under surface of the eyelid is red; and the animal appears very uneasy, often looking round to his flanks, as if he were pointing out the seat of his pain; the urine is high coloured, and in small quantity; the dung also is of a dark colour, and unusually hard. These symptoms rapidly increase; he lies down, and rolls about the stall; after a short time, he rises suddenly, but soon lies down again, and rolls as before: the breathing becomes more laborious; the pulse so quick and small, that it cannot be distinctly felt; violent sweats break out upon the body, but the legs and ears are cold; and sometimes he becomes delirious. These symptoms are soon followed by death. In some cases, the animal appears to be relieved, and is more quiet, a short time before he dies, which probably depends on mortification having taken place in the bowels. This disease is very rapid in its progress, and unless checked at its first appearance, or soon after, generally proves fatal. Copious bleeding is the grand remedy, and should be carried to the same extent as in inflam-

mation of the lungs. The sides should be blistered, and the mustard embrocation rubbed upon the surface of the belly. The legs and ears should be kept warm, by rubbing them frequently, and, in the interval, wrapping them in woollen cloth.

The only medicine to be given, internally, is castor oil, the dose a pint, which is to be repeated in six hours, unless the costiveness is previously removed: clysters, composed of warm water and a little olive oil, are to be given every second or third hour, until the dung becomes soft. Inflammation of the bowels is sometimes a consequence of flatulent colic, or gripes. The spasm of the bowels, by which this complaint is caused, is sometimes so obstinate, as to resist the most powerful remedies. The confined air, at length, so stretches the bowels, as to bring on inflammation, which soon destroys the animal. Persons unacquainted with veterinary medicine are seldom capable of distinguishing between the flatulent colic and inflammation of the bowels: it is of importance, however, that those who are concerned with horses, and who are so situate that they cannot procure immediate assistance from a veterinary practitioner, should make themselves familiar with the symptoms by which these diseases may be distinguished; because they require very different

treatment. In the flatulent colic, the pulse is the same as in health; in inflammation of the bowels, the pulse is always very quick: the latter disease is generally gradual in its attack; the former comes on rather suddenly. The pain, in flatulent colic, appears to be violent, the horse rolls about the stall, groans, and looks round to his flanks; in this respect, it resembles inflammation of the bowels; but the natural state of the pulse is a criterion by which it may always be distinguished. The flatulent colic is in general easily cured by any warm, stimulating medicine; such as gin, peppermint water, Daffy's elixir, which is nothing more than proof spirit, in which senna, carraway seeds, and other aromatics, have been steeped. Warm beer, with powdered ginger, is also a very common remedy; but I have found the following mixtures most efficacious.

### MIXTURES FOR THE FLATULENT COLIC.

N° 1.

| | |
|---|---|
| Oil of turpentine, from . | 2 to 3 oz. |
| Spirit of nitrous ether, . | 1 oz. to 2 oz. |
| Gruel . . . . . . . | 1 pint. |

Mix for one dose.

No 2.

| | |
|---|---|
| Spirit of nitrous ether, . | 1 oz. to 1½ oz. |
| Tincture of opium, . . | 6 drs. to 1 oz. |
| Oil of peppermint, . . | ½ dr. to 1 dr. |
| Gruel or water, . . . | 1 pint. |

The mixture No. 2 is to be preferred when the bowels are rather open than otherwise: it is also better adapted for delicate blood horses. The turpentine in No. 1, if suffered to run over the lips, produces considerable irritation, particularly in horses of the above description; there it should be given carefully.

As soon as this has been given, it should be washed down with a hornful of water. Clysters of warm water and salt should be given, and the belly should be well wisped. If no relief be obtained in half or three quarters of an hour, let the above mixture be repeated. If the horse be in good condition, and particularly if the under surface of the eye-lid appear red, and the pulse become a little quicker than natural, he should be copiously bled. It sometimes happens, that this disease causes inflammation of the bowels, even under the most proper treatment; but more commonly from improper management or neglect. It is easy to ascertain when inflammation is coming

on, by the altered state of the pulse, which becomes considerably quicker and smaller: when the pulse rises to a hundred in a minute, and is not readily distinguished, there is but little chance of recovery: when it amounts to 120, or even to 110, death, I believe, is inevitable.

And here I beg leave to suggest the propriety of providing every waggoner with a bottle of gripe mixture, a drenching horn, and fleams. Waggon-horses are often attacked with this complaint in a situation where no remedies can be procured; and I have reason to believe, that many horses have died of it, through the want of a timely remedy.

Inflammation of the bowels is sometimes caused by giving too strong a dose of purgative medicine, or by improper management during its operation. When a purgative operates with unexpected violence, and it is thought necessary to put a stop to it, the only safe plan that can be adopted is to give frequently some mucilaginous fluid: the best of which, according to my experience, is the preparation called arrow-root, which seems to be a pure starch. Eight ounces of the powder may be mixed with a little cold water: this is to be added to a gallon of boiling water; the whole to be well stirred; and, after boiling a minute or two, re-

moved from the fire. About a quart of the mixture is to be given every hour, until the purging appears to be checked. I have seldom known it fail of stopping excessive purging; whereas, in many instances, where astringents or opiates have been given, though the purging has been stopped, inflammation of the bowels has been the consequence.

When a horse is suffered to take cold water after physic, or is exposed to cold, instead of operating in the usual time, it often causes sickness and gripes, which, if not relieved, may terminate in inflammation of the bowels. On this occasion, clysters should be injected, and warm water given frequently: if he refuse to drink, it should be given with a horn. This, with walking exercise, soon brings on purging, by which the horse is relieved.

## *Observations on the Prevention and Treatment of Lameness.*

The following observations are the substance of some lectures, which the author delivered, last winter, at Exeter, on the structure, economy, and diseases of the horse's limbs, and the principles and practice of shoeing. The anatomical descriptions have been omitted, because it is impossible to convey a correct idea of the structure of the limbs, except by dissections of the parts. He has, therefore, confined himself to an explanation of those diseases by which lameness is caused, and the most effectual method of preventing and treating them.

The serious loss and inconvenience arising from lameness have excited particular attention to the subject; and, though considerable improvement has been made, within a few years, in the art of shoeing, as well as in the treatment of lameness, it is a generally acknowledged fact, I believe, that a large proportion of the lamenesses which occur will admit only of palliation, and that a considerable number are absolutely incurable. Under these circumstances, it is surely of importance to inquire how far such diseases may be prevented;

and as this is a principal object of the present undertaking, the author hopes, that the observations he has to offer on the subject will not be thought undeserving attention.

Though the prevention of lameness is considered as an object of the highest importance to sportsmen, and proprietors of horses in general, a plain description will also be given of those diseases which cause lameness; and the method of treating each will be minutely detailed. It is not the author's intention to address himself to professional men only; he wishes to be generally understood, and will, therefore, carefully avoid all technical language, and endeavour to express himself in the most plain and intelligible manner.

When a horse is observed to be lame, the first thing to be done is to ascertain, with precision, the seat and cause of the lameness: in some cases, this is not difficult, particularly when it is occasioned by wounds, blows, or violent strains; the affected part is then readily perceived: it often happens, however, that the seat and cause of lameness are very obscure, and cannot be discovered without the most careful examination.

So complicated is the structure of the foot, that an important part is often injured, and severe lameness occasioned, without any alteration taking

place in its external form: in such cases the lameness is almost invariably, by farriers, said to be in the shoulder. The most common cause of lameness is some disease of the foot; and, when it is considered how much this part is exposed, and what vast burdens it has to sustain, it might naturally be imagined, that such diseases are the unavoidable consequence of the severe labour in which the animal is employed: we find, however, in the structure of this part, many wonderful contrivances for its defence; and, perhaps, it might be safely asserted, that, by proper management, the foot may be preserved in a sound state, as long as the other parts of the body.

## CHAPTER XV.

### *On Lameness from Contraction of the Hoof.*

THOUGH the hoof, to a common observer, may appear as a mass of unorganized matter, defending, merely by its hardness, the sensible parts, which it encloses; it will be found, upon a careful examination, to consist of a series of tubes, through which a fluid is transmitted for the purpose of keeping up a proper degree of elasticity and flexibility in the part.

When a horse is in a state of nature, the hoof is, by these means, as well as by the due exercise of the various parts which compose it, preserved in a proper degree of elasticity and temperature; but when kept in a stable, standing great part of the day upon straw, and his feet placed under the management of the smith; or if, by any means, a preternatural degree of heat is excited in the foot, the horny matter, which composes the crust, or wall of the hoof, (see plate iii,) will be disposed to contract or shrink; and the contraction will proceed more or less rapidly, according to the

degree in which the disposition to contraction exists, and the resistance that is opposed to it.

When the crust or wall of the hoof is separated from the other parts, as it is represented in plate iii, fig. 1, and exposed to the air, its moisture quickly evaporates; and, as every part is removed which is capable of opposing contraction, it takes place very rapidly, as may be seen from fig 2, which represents the same subject, as it appeared a few days after it had been stripped from the foot.

In the perfect foot, the tendency to contraction is powerfully resisted by the bottom of the hoof, consisting of the sole, bars, and frog; as well as by the coffin bone, and other parts, by which it is completely filled. Unless the contractile disposition is very considerable, the resistance thus afforded is sufficient to prevent contraction; but when the bars are destroyed, the frog mutilated, the shoes made and applied improperly, and the horse made to stand great part of his time on litter, contraction will necessarily take place; for although the internal or sensible foot forms a strong resisting power, the pressure it suffers causes a gradual absorption to take place; and the contraction will proceed as the resisting medium is thus removed.

In speaking of the method of preventing this

disease, it is necessary, first, to inquire on what the contractile disposition depends: and then state the means that nature has provided to oppose it, and the artificial contrivances that may be employed for the same purpose.

The foot, like other parts of the body, is liable to become inflamed, or to have its natural temperature increased, by various causes; and, when this happens, the horny covering, or hoof, will not be duly supplied with that moisture, on which its elasticity and flexibility depend; and contraction will be the consequence.

Horses that are rode or driven hard upon the road, and afterwards kept, for several days together, without exercise, standing upon dry litter, are particularly liable to contraction of the heels: the disease is frequently produced also by a sudden transition from cold to heat; that is, by putting a horse into a hot stable, upon dry litter, and feeding him highly, after travelling some time in wet and cold weather; and, sometimes, it takes place without any assignable cause.

If we compare the feet of post-horses, and others employed and kept in a similar way, with those employed in agriculture, and kept principally at grass, a remarkable difference may be observed: in the latter, we rarely meet with contracted hoofs,

while the former are seldom free from defect. I know not how this fact can be accounted for, unless we allow, that, by avoiding those causes which excite a preternatural degree of heat in the foot, we prevent contraction, as there will then be no disposition in the horny matter to contract. There are few horses, however, so strictly attended to, as not to be exposed, at times, to those causes by which a contractile disposition is excited; it is, therefore, of importance to preserve carefully the parts that nature has provided to prevent contraction, which are the bars and the frog. A horse should not be allowed to stand upon litter, except when he requires to lie down, and then his feet should be *stopped*, as it is termed, with soft clay, or cow-dung; and the stopping should be renewed as often as it becomes dry. If the frog appears to be too much softened, or injured by the stopping, it should be covered with the tar ointment. This, if properly attended to, will keep the feet sufficiently cool; and, with good shoeing, will generally prevent contraction.

If we examine the hoof, when stripped from the foot, the horny frog and sole having been cut away, we shall find, that the contraction which then takes place, is principally at the heels, where the horn is very thin and flexible, as in plate iii, fig. 1,

which represents a hoof, that had been stripped off several days; here the heels are so shrunk, as to be bent inward, while the other parts appear very little altered in form.

If, then, when a shoe is applied, the nails are placed round the toe, and as far from the heels as the security of the shoe will admit, the motion of the heels will not be impeded; and some part of the quarters also will be unrestrained. Should it be imagined, that the pressure of the shoe, on the bottom of the foot, would prevent the action of the heels and quarters, it is easy to make the upper surface of the shoe, towards the heel, slope a little outward, instead of inward, as it commonly does, and then this obstacle would be removed.

Various means have been recommended for the cure of contracted hoofs; and, among these, several mechanical contrivances have been proposed.

A few years since, many were led to believe that an effectual remedy of this kind was discoveed. I heard of many wonderful cures performed by this contrivance, which, though a professed secret, is pretty well known to be nothing more than the old screw shoe, with some trifling alteration; perhaps, making two or three hinges instead of one.

It was soon discovered, however, that the

boasted efficacy of this contrivance was only imaginary; and, though it occasionally afforded temporary relief, and improved the form of the hoof, it was never found to be productive of permanent advantage.

It is probable, that the principal cause of the temporary reputation it acquired was the constant state of moisture in which the hoofs were kept during its application; by which the horny matter was softened, and the compression of the sensible foot, for a time, removed, or diminished; but, on returning to their former situation, they soon became as lame as at first. The old screw shoe is represented in plate ii, fig. 2.

Mr. Coleman has obtained a patent for a shoe, which is represented in plate i. This shoe is intended to prevent contraction of the heels; and is said to be more secure than the common shoe, as the inner corners of the heels are bent down upon the side of the bars, and must effectually prevent any lateral motion in the shoe. This is certainly a very desirable property, as the shoe is equally secure with a smaller number of nails; but, when there is a strong disposition to contraction, it would probably do mischief, by bruising the sensible parts which are placed between the horny heel and the bent part of the heel of the shoe.

In plate ii, fig. 1, is represented another con-

trivance for curing contraction, first proposed, I believe, by sir John Rogers. I have seen cases where this shoe has been applied with advantage; and these were, when the horny frog had been destroyed, and the heels so contracted, as to compress or so squeeze the sensible frog, that it was rendered incapable of forming horn for its defence. Before this shoe is applied, that part of the horn which is pressing on the sensible frog is to be carefully removed, and a regular slope made, on the outside of the angle formed by the junction of the bar and crust, for the claw of the shoe to rest upon. There is some difficulty in making this shoe, and fitting it nicely to the foot; but if the claw of the shoe is so bent as to be in contact with the sloped heel, and extend nearly to the bottom of the slope, it will effectually prevent any farther contraction of the heel; and, if the point of the claw is made to incline inward, in a trifling degree, it will have a tendency to expand the heels.

This shoe is not recommended as a general remedy for contracted hoofs, but is certainly useful in those particular cases I have described; that is, when the heels are so contracted, as to destroy the horny frog. Whenever this shoe is employed, it is necessary to keep the hoof moist by wrapping it in a bran poultice; but, as moisture would be

injurious to the frog, in such circumstances, a pledget of tow, dipped in the following ointment, is to be placed on it; which will not only defend it from moisture, but, by its stimulating quality, promote the reproduction of horn.

Moderate pressure on the frog is also necessary, which may be applied by means of a flat piece of wood passing from the inside of the toe of the shoe to the back part of the frog, and secured by pieces placed transversely; this will serve, at the same time, to keep the dressing in its situation. As the frog becomes firmer, the pressure may be gradually and carefully increased; and, when sufficiently covered with horn, the shoes may be removed, and the horse turned to grass.

The most effectual method, however, of expanding contracted feet, is that originally proposed by Mr. Coleman; *viz.* rasping the heels and quarters, and exposing the frog to pressure; at the same time, keeping the hoofs moist, either by immersing them in warm water, or, what is much better, turning the horse to grass in soft ground. When the frog is soft and rotten, as we have just described, the claw shoe and tar ointment should be employed, with moderate pressure, till the frog is become sufficiently firm; but the feet

should be softened and kept moist by means of bran poultices.

When contraction of the heels has been suffered to proceed so far as to cause lameness, a radical cure is seldom effected. The contraction may be removed by the means we have recommended, and sometimes the lameness may appear to go off; but, when the horse is taken into the stable, and put to work, it generally returns. Prevention, therefore, is an object of great importance; and the means we have recommended for this purpose should be carefully attended to. No one can say what degree of contraction will produce lameness: we sometimes meet with hoofs so contracted, that the heels nearly approach each other, and scarcely any frog can be seen, while the horse appears perfectly free from lameness; at other times, we see lameness produced by a slight contraction of the heels. Though the heels are the parts where the contraction most readily takes place, yet we generally find the whole foot diminished in size, and sometimes observe one foot smaller than the other. A horse is sometimes lame, from contraction, without its being noticed; and often lame in both feet, when he is supposed to be lame only in one. In the former case, it arises from his being equally

lame in both feet, which causes him to step equally, but very short; going, as it were, upon his toes, in order to avoid, as much as possible, any pressure or concussion upon the heels; but when a horse is much lamer in one foot than the other, he will step tolerably firm on the best foot, to relieve that which is most tender. The lameness, however, may easily be discovered by trotting him, in hand, down a hill, without any support from the bridle.

### TAR OINTMENT.

| | |
|---|---|
| Common tar . . . . . . | 1 lb. |
| Sulphuric acid . . . . . | ½ oz. |

Add the acid to the tar, when melted, but not very hot, and continue stirring the mixture until it is cold.

An eminent veterinarian, Mr. Bracey Clark, has lately published a dissertation on the foot of the horse and shoeing; in which he endeavours to show, from some ingenious experiments, that contraction of the heels is an unavoidable effect of shoeing; the nails forming so many fixed points, which prevent the natural expansion of the hoof: his experiments do not appear, however, to me, to

establish the opinion. In plate v. are represented the feet of two horses. Fig. 1 was taken from a horse, between three and four years old, that had worn shoes about twelve months. Fig. 2 was taken from one between five and six, that had worn shoes about three years. If the nails were so material a cause in producing contraction, as Mr. Clark seems to think, one would hardly expect that the natural form of the hoof would have been preserved, as it appears to have been in fig. 2; and that so high a degree of contraction would have taken place by one year's shoeing, as was the case in fig. 1. I had taken a cast of a horse's foot, that was more than twenty years old, which was very little contracted; but it was accidentally broken. Another horse was shown me, about sixteen years old, whose feet had suffered very little. In short, after considering the subject very attentively, I am convinced that contraction of the heels is by no means a necessary consequence of shoeing; and that, by good management and good shoeing, we may generally, but not always prevent it.

## CHAPTER XVI.

### *On Lameness from Thrushes.*

THRUSHES, according to the common acceptation of the term, consist in a discharge of dark-coloured offensive matter from the cleft, or division of the frog; and are often caused by a contraction of the heels, by which the sensible frog is so compressed or squeezed, as to become inflamed, and even ulcerated: the part of the sensible frog which suffers most is that which forms its cleft, or division; the sides and bottom of which are naturally well covered with horn; but, in this case, the horny covering separates and sloughs off; and, instead of reproducing horn, it forms only that offensive matter which constitutes thrushes.

This disease, however, is not always the effect of contraction: we have often seen the frog affected with thrushes when nearly of its natural width, and the heels but little contracted; and we have frequently seen the frog perfectly sound and firm, though extremely narrow, and the heels contracted in a considerable degree.

When thrushes are caused by a contraction of the heels, the first step towards a cure is to take off the unnatural pressure from the sensible frog, by rasping the quarters, unless they are already weak and yielding, and applying carefully the claw shoe (plate i, fig 2). The foot is then to be put into a bran poultice, by which the horn will be softened, and any inflammation that may exist removed. The next day, after cleaning the cleft of the frog, and making it perfectly dry, a little of the tar ointment is to be melted, but not made hot, and poured into it: the whole frog is then to be covered with a pledget of tow, that has been dipped in the tar ointment, and moderate pressure applied, by means of a flat piece of wood, as we have before described. Other preparations have been occasionally employed in thrushes with success; *viz.* a solution of blue vitriol, or sulphat of copper, one ounce to ten or twelve ounces water; compound tincture of benzoin, or Friar's balsam; tincture of myrrh, with aloes; a mixture of honey, vinegar, and verdigrise, boiled together, or the preparation commonly called Egyptiacum, &c.

When thrushes happen, or the frog becomes diseased, independent of contraction, the tar ointment, or any of the above preparations, with moderate pressure, will be found useful. It some-

times happens, that, by stopping the discharge from the frog, the foot becomes inflamed, and lameness is produced; in this case it is advisable to procure a return of the discharge, by applying poultices: should the inflammation have extended to the heel, so as to cause swelling, a diuretic ball may be given.

## CHAPTER XVII.

### *On Canker.*

CANKER is a disease of the sensible frog, often extending to the sole, and even to the laminæ, or elastic membranes, by which the hoof is united to the coffin bone. The matter discharged in this disease has a peculiar and very offensive smell; considerable excrescences often spring up from the sensible sole, which, when removed, are speedily reproduced, unless proper remedies are applied. When this disease has been neglected, until it has spread to the sole, bars, or elastic membranes under the crust, or wall of the hoof, which it often does towards the heels, it proves very obstinate, and often incurable; particularly when accompanied with foulness of the heels or grease. The first thing to be done is to expose the diseased parts, by removing completely the horn which covers them, and to cut away any excrescences which may have formed. This operation will cause considerable bleeding; and, when that has ceased, the following caustic powder is to be sprinkled over all the diseased parts. The bottom

of the foot is to be covered with tow, and so secured with canvas, brought over the foot and tied above the hoof, that the parts may receive some degree of pressure: the next day the same dressing is to be applied, after wiping away or separating the slough, which the first dressing will have occasioned. By repeating this application three or four times, the parts will assume a healthy appearance, and the offensive smell will be corrected, and milder dressings will then be proper; such as the tar ointment, or N° 1 or 2.

### CAUSTIC POWDER.

| | |
|---|---|
| Take of powdered muriat of quicksilver | 1 oz. |
| Sulphat of copper, finely powdered . | 2 oz. |
| Prepared chalk . . . . . . . . . | 4 oz. |

Mix.

### N° 1.

| | |
|---|---|
| Muriat of quicksilver . . . . . | 1 dr. |
| Muriatic acid . . . . . . . . . . | 3 dr. |
| Spirit of wine . . . . . . . . . | 8 oz. |

Mix.

No 2.

| | |
|---|---|
| Compound tincture of benzoin . . | 8 oz. |
| Muriat of quicksilver . . . . . . . | 1 dr. |

Mix.

It generally happens, in this disease, that one part looks healthy, while another continues in a foul state; in which case the caustic should be applied only to the latter: here the lunar caustic is most convenient, as its action may be confined to the foul part. Various caustics have been occasionally found useful in canker, *viz.* sulphuric acid, solution of quicksilver in nitrous acid, slaked lime, and many others. When all the parts have assumed a healthy appearance, and lost their offensive smell, the mildest dressings are most proper; such as compound tincture of benzoin, or Friar's balsam, and powdered alum and Armenian bole. A cankered foot should be dressed daily; and, during the cure, it is necessary to observe, at every time of dressing, whether the disease is creeping under any part of the sole, which has not been removed in the first operation; in which case, it is to be immediately cut away, and the diseased part completely exposed; for it often happens, that, while one part is healing and getting well, the disease is spreading in another direction.

Canker is a disease that always arises from negligence, and may therefore, by proper attention, be prevented. It most commonly happens to horses that have foul heels, and are frequently affected with the grease: by neglecting this disease, it ultimately spreads to the sensible frog; and, being allowed still to go on, becomes an obstinate, perhaps incurable canker. The grease, therefore, is a disease which should always be attended to; and, though in some cases we may not be able to remove the disposition or tendency to the disease, yet we can always, by adopting a proper system of management, that is, by cleanliness, the occasional use of astringent lotions, and diuretic alteratives, prevent it from degenerating into canker.

## CHAPTER XVIII.

### *On Lameness from Inflammation or Tenderness of the elastic Membranes, by which the Coffin Bone is united to the Hoof.*

THIS disease is produced by various causes; and, when considerable, is easily discovered by the increased heat and tenderness of the foot: it is sometimes, however, so slight, that no unusual heat can be perceived; nor does the horse appear to feel any pain from moderate pressure, or from being struck on the foot slightly with a hammer; nor does any alteration take place in the form of the hoof. Between these two extremes, there are many degrees; and the disease may be distinguished with more or less difficulty, as it approaches the one or the other.

When the smith is consulted in slight cases, he generally takes off the shoe to examine the foot; and, not finding any thing to account for the lameness, he confidently asserts, that it is from a strain of the shoulder. (See *Lameness in the Shoulder.*) It is so difficult, in these cases, to distinguish the

seat of lameness, there being no external appearance by which it is indicated, that the most experienced persons have been at a loss what opinion to give of them, or what plan of treatment to pursue. The difficulty, however, will be considerably diminished, by attending to the following circumstances. If the lameness is in one foot only, observe if there is any difference in the heat of the feet; and if, when in the stable, he often stands with one foot advanced beyond the other, or if he is frequently changing his feet. After this, let every part of the limb be carefully examined. Should nothing be found, after a careful investigation, to account for the lameness, there will be no danger in concluding, that the foot is the part affected, and treating it accordingly, for the following reasons:

1. When lameness arises from any injury or disease of the shoulder, or other parts of the limb, except the foot, the cause may almost always be discovered by an attentive investigation; but so complicated is the structure of the foot, that an essential part may be hurt without any external appearance of injury, or any kind of symptom by which the affected part may be discovered.

2. If we compare the number of lamenesses which arise from injuries, or diseases of the feet,

to those of the shoulder, the proportion of the former will be greater than an inexperienced person can imagine; indeed, I may safely affirm, that, within the last year, not above two cases of shoulder lameness have occurred in my practice, though I have met, perhaps, with more than fifty cases that have been supposed to be such; and as to the lamenesses commonly attributed to splents, I firmly believe, that nine tenths of them are seated in the foot.

3. Whatever part of the foot may have been injured, so as to occasion the lameness, except it arise from wounds in shoeing, bruises, corns, or other causes easily discovered, the same remedies are applicable; *viz.* removing the shoe, keeping the foot cool and moist, and blistering from the foot to within about three inches of the knee joint, avoiding only the pit of the heel, where blisters sometimes occasion troublesome cracks or ulcers: this part should, therefore, be covered with hog's lard, to defend it from any of the blister which may run down the leg. Another advantage arising from this treatment is, that, should any injury of the fetlock joint have escaped notice, or if a splent be suspected of causing the lameness, the blister is the best remedy that can be employed.

When the elastic membranes are inflamed in a

considerable degree, there is no difficulty in discovering it, by the increased heat and tenderness, and from the pain the animal feels from standing long upon the affected foot. When both feet are inflamed, he is constantly changing them, or lying down: if one only is affected, he advances it before the other to relieve it, as much as he can, from the weight of the body. This violent kind of inflammation arises most frequently from what farriers term a *chill*, that is, when a horse is over-ridden, and suffered to take cold; and often, perhaps, from plunging him into a river, when sweating; whence general inflammation, or fever, is liable to take place, which sometimes extends to the feet, causing violent inflammation in the elastic membranes, sometimes affecting also the sensible sole. In cases of this kind, the horse should be bled plentifully, and take a purgative; the shoes should be taken off, and the sole pared away with a drawing knife, until it yields a little to the pressure of the thumb; if the quarters are thick and inelastic, they may be rasped: after this, the pasterns are to be blistered, and the whole foot kept constantly moist by means of bran poultices: this is preferable to making the horse stand in warm water, as he is generally inclined to lie down in this complaint, which affords great relief to the

inflamed parts. It is necessary to moisten the poultice frequently during the night, as well as the day; for when the foot is very hot, the moisture soon evaporates: and, if the poultice is suffered to get dry, it rather does harm than good. When this complaint is improperly treated, the foot undergoes a considerable alteration in its form; the elastic membranes of the front of the foot are thickened, lose their elasticity, and assume a horny consistence. The hoof loses its natural oblique direction, and approaches towards the horizontal line. The bottom of the coffin bone loses its natural concave form, becoming more or less convex, or projecting. The horny sole takes the same form, and becomes so thin, that very moderate pressure is extremely painful. The disease, in this state, is often productive of incurable lameness, and most commonly can only be palliated by careful shoeing. (See *Convex, or Pumice Feet.*) It often exists, however, in a much slighter degree; so that a horse, when carefully shod, feels but little inconvenience from it. In some instances, inflammation of the elastic membranes has taken place in so high a degree, as to cause suppuration and ulceration of those parts: in this case, the horny covering separates, and the matter spreads all over the hoof, often destroying

the animal by the pain and irritation it occasions. The best termination that can be expected of this dreadful disease is an incurable lameness. When a horse recovers from this lameness, however slight it may have been, he should not be immediately worked, but allowed at least a month's run at grass, in soft meadow ground. I have known horses become lame merely by standing upon litter for some time, without being taken out for exercise. In this case, also, the elastic membranes appear to be affected. The best remedies, in such cases, are, blistering the pastern, thinning the sole, and a run at grass.—(For a description of these elastic membranes, see vol. i.)

This disease, as well as contraction, may be considered as peculiar to the fore feet, the hind feet being very rarely affected with either.

# CHAPTER XIX.

## *On Lameness from Wounds of the Foot.*

THESE accidents most commonly arise from the carelessness of the smith in nailing the shoe to the hoof. The nail is either driven so as to wound the sensible parts, or so near them, as to occasion, by its pressure, pain, inflammation, and, in a few days, suppuration, or the formation of matter.

When a nail is driven so close as to wound the sensible parts, the animal suddenly draws back his foot from the pain he suffers; and the smith, aware of what he has done, removes the nail, and takes no farther notice of it; though, sometimes, to avoid suspicion, he fills the vacant hole in the shoe with the head of a nail; and, when the horse is afterwards found to be lame, he too often denies having any knowledge of the cause. When the horse is not worked immediately, and the wound not considerable, it may not occasion lameness; most commonly, however, it is of a more serious nature, causing violent inflammation, which terminates, in a few days, in suppuration. The mat-

ter which is formed, being confined, spreads under the horny sole, and causes so much pain that the horse can scarcely put his foot to the ground. If the horse be not relieved, by giving vent to the matter, it continues to spread, and ultimately breaks out at the coronet, or top of the hoof. When the disease has been suffered to proceed thus far, it is difficult of cure, and often leaves a permanent tenderness of the part.

As soon as it is known that a horse has been pricked, as it is termed, in shoeing, if the smith were to remove the horn, where the nail entered, with a small drawing knife, so as to allow the matter, which may form, to escape freely, all this mischief might be avoided. It would be proper to let the horse stand without a shoe for a few days, and wrap up the foot in a large bran poultice. It is a common practice with smiths, on these occasions, to pour oil of turpentine into the wound; and, sometimes, in order to increase its power, they set it on fire; after this the shoe is put on, and the bottom of the foot filled up with tow dipped in a hot mixture of lard and turpentine. In trifling wounds of the foot, the horse often gets well under this treatment, though more slowly, perhaps, than he would, had these remedies been omitted. It may be proper, however, to

pour a little Friar's balsam into the wound, which forms a sort of coating, and may serve to exclude air and moisture from it, and thereby prevent the formation of matter: with the same view, the cavity that has been made by removing the horn may be lightly filled with tow dipped in digestive ointment. But, in wounds of a more serious nature, there is generally a high degree of inflammation, so considerable sometimes as to excite fever; and, in a few instances, it has been followed even by locked jaw. All stimulants should here be avoided, until the inflammation has subsided, and matter is formed, which invariably happens in wounds of this description.

The first thing to be done in these cases is to enlarge the opening made by the nail, and pare away the horny sole, on the same side, until it yields to the pressure of the thumb; a large poultice is then to be applied. After two or three days, matter will have been formed; and, upon pressing the sole, near the wound, a little dark-coloured fluid will be seen issuing from it. On introducing a probe into the wound, it will be found to pass under the horny sole, sometimes to a considerable extent: and as far as the horny and sensible sole are separated, so far is the former to be removed. A dressing of digestive ointment is

then to be applied; by means of which, a new horny sole will be gradually produced. Should the matter have penetrated to the coronet, the same operation and treatment are necessary, excepting the poultice; for, when the disease has proceeded thus far, we may be sure that there is matter confined under the horny sole. The sore, or opening on the coronet, is to be dressed with a solution of blue vitriol, or either of the preparations, marked N° 1 and 2, in the chapter on the *Canker*. After being dressed for three or four days with either of these preparations, Friar's balsam and a plaster of digestive ointment may be used. When the nail has been driven so near the sensible parts, as to cause pain by its pressure, inflammation comes on slowly and gradually; and sometimes the lameness does not appear until several days after the shoe has been applied. This may more properly be termed a bruise of the sensible parts of the foot, than a wound; but it produces the same effects, which are inflammation and suppuration. This kind of lameness comes on gradually; and is often so inconsiderable at first, that it is not observed by a careless rider. When the smith is consulted on these occasions, he seldom discovers the seat of the lameness, (unless it be after matter has been formed, when the cause is too manifest to es-

cape his notice,) but attributes it to a strain of the shoulder, or a *bit of a wrench* in the fetlock joint. This is more likely to be the case when the smith that shod the horse is applied to; but, if another is consulted, he takes care to search very diligently for any errors his rival may have committed; and, though he find nothing to account for the lameness, will often affirm, that the horse has been *pricked;* he then *stops* up the foot with some greasy substance, and trusts to nature and rest for making good his assertion; for, should the horse recover, he depends on its being attributed to his superior skill and penetration.

Much mischief, however, is often done by their mode of investigation; for they cut away the horn so freely, between the bottom of the crust and the sole, or where the nails are placed, that scarcely any room is left for nailing on a shoe; and it is, perhaps, a considerable time before the horn can be reproduced, which they have unnecessarily removed. When a horse has been pricked in shoeing, and the lameness does not go off spontaneously, it must, in a short time, be discovered. The lameness gradually increases; and, when matter is formed, it is very easily detected, by pressing moderately, or by a slight blow on the part; and, should it escape observation at this period, it can-

not fail of being noticed when it breaks out at the coronet. The part of the fore foot most commonly wounded is the inside quarter, from the horn being thinner in that part of the foot than any other; but, in the hind foot, the quarters are generally thicker; and here we most commonly find the wound nearer the toe. When it is suspected that a horse has been wounded or *pricked* in shoeing, the first thing to be done is to strike on the foot gently with a hammer, all around the hoof, where the nails are clenched, and on the shoe also. The wounded part may thus be generally discovered by the horse suddenly withdrawing his foot when it is struck. The shoe is then to be taken off, and the wounded part opened with a drawing knife, and treated as we have before described; but, should no tenderness be observed in the foot, it would still be advisable to take off the shoe, and apply a poultice to the foot; that is, supposing every other part of the limb to have been carefully examined also, and no cause for the lameness discovered. If the lameness does arise from a wound in the foot, it will gradually get worse; and, when matter has been formed, the tenderness is so considerable, that it can scarcely fail of being detected. Sometimes the horny sole, by which the matter is confined, is of considerable thickness; and it some-

times happens, that the smith, having pared away as much of the horn as he thinks can be done with safety, is afraid to go any farther. But, whenever we find great tenderness, upon pressing the sole with the thumb, or striking it gently, we may be assured there is matter underneath, and that it ought to be let out, however thick the horn may be which covers it. If there be no matter, it may be known by minute specks of fluid blood appearing on the horn, as we approach the sensible sole. This indicates, that no separation has taken place between the sensible and horny sole, and that there is no disease in the part. Supposing this mistake to have been made, which is very unlikely to be the case, if the directions we have given are attended to, the part is to be covered with digestive ointment, and defended from pressure, until the horn has grown to its usual thickness.

The horse's foot is often wounded by his stepping on a nail, which, in technical language, is termed *picking up* a nail. The frog is the part generally wounded, and most commonly on one side. When the nail enters at the back or wide part of the frog, that is, towards the heel, there is much less danger than when it enters near its toe, or termination. In the latter situation, the coffin joint is exposed, and is often wounded, causing

obstinate or incurable lameness; and, should the nail not have penetrated so far as to enter the joint, it generally wounds the tendon by which it is covered. The treatment is similar to that we have recommended for wounds in shoeing; that is, opening the wound, paring away the surrounding horn, and poultices. When the inflammation is considerable, bleeding, bran mashes, and a purgative, are useful. After a few days, it will be found, that the horn surrounding the wound has been separated from the sensible parts; when, by pressing gently on it, a little dark-coloured fluid will be observed to ooze from the wound. All the horn that has been thus separated, should be carefully removed, however extensive it may be. A dressing of digestive ointment is then to be applied, having previously poured a little Friar's balsam or tincture of myrrh into the wound. If the wound does not appear to get better, but discharges a thin, yellow fluid, it should be touched carefully with the nitrat of silver, or lunar caustic, and afterward dressed with Friar's balsam. It sometimes happens, however, when the nail has penetrated through the tendon, and injured the coffin joint, that the disease gradually increases, and at length becomes so bad and so hopeless a case, that it is deemed necessary to destroy the animal.

## CHAPTER XX.

### *On Lameness from Bruises of the Foot.*

Cases of this kind are by no means uncommon, and are generally caused by the pressure of the shoe, particularly in horses with thin flat soles. Horses, also, with good soles, are occasionally lame from this cause, through the injudicious management of the smith, who, being generally ambitious of improving the natural form of the foot, pares away so much of the sole for this purpose, that there is not enough left to defend the sensible parts from the blows and pressure to which it is necessarily exposed; for, if the shoe is not made so flat as to bear on this thin part, any vacancy that is left is soon filled with dirt or gravel in travelling; and the same effect is produced as if the shoe were in contact with it. The method of detecting and treating this kind of lameness is similar to that we have recommended in wounds of the foot; that is, by pressing it, or striking it lightly with a hammer; and giving free vent to any matter that may be confined.

A horse is sometimes observed to be tender, from this cause, immediately after shoeing, particularly in the fore feet; and it will generally be found that the tenderness arises from the toe having been pared too much. If the shoe is not pressing on the thin part, the horse should be allowed to rest a few days, and a little tar ointment should be applied to the sole, by which it will acquire its usual firmness; but, if the shoe is bearing on the sole, it must, of course be taken off and altered.

I have known many cases of lameness, from matter forming under the sensible sole, without any apparent cause. It is probable, however, that, in almost all these cases, it was occasioned by a bruise. I have known it happen in several instances at grass; also in the stable, when the horse has been at rest; and while a horse has been doing his ordinary work.

The following cases are given as examples of such lameness, and of the manner in which they were treated.

### CASE I.

About forty cavalry horses were turned to grass in soft meadow ground, having previously taken off the shoes, and pared the fore feet. About two

or three weeks after, several of them were observed to be very lame: and, on examining the feet, it was found that matter was confined under the sole. All the horny sole, which had separated, and by which the matter was confined, was completely removed, a hollow shoe applied, and the whole of the bottom of the foot covered with digestive ointment. They all got well in a short time. From this we may learn, that when a horse is turned to grass without shoes, his feet should be pared with caution; perhaps it would be the safest plan, merely to rasp the bottom of the foot to a level surface, and leave the sole untouched. It must be recollected, however, that, in certain cases of lameness, thinning the sole, previous to being turned to grass, is recommended as a remedy.

### CASE II.

A horse, that had been at grass some time, was observed to be lame: he was taken up and examined by the smith, who could not find any thing to account for the lameness, and, therefore, concluded it must be in the shoulder. On examining the foot, I found a little moisture oozing from a small fissure in the coronet; and, on finding the

horse flinch, when struck on the bottom of the foot, towards the inside heel, I pared away the horn from that part with a drawing knife, and let out some dark-coloured fluid. A separation between the sensible and horny sole had taken place to a considerable extent. All the horny sole that had been detached was carefully removed, and a dressing applied of digestive ointment. The fissure in the coronet was dressed, at first, with a solution of blue vitriol, afterwards with Friar's balsam. By this treatment the horse soon became perfectly sound.

CASE III.

A horse had been fired for a lameness in the fetlock joint of the hind leg, and turned loose into a large box: about three or four weeks after, he was observed to be lame in the other hind leg; the smith was called in to take off the shoe, and examine the foot: nothing was found to explain the lameness in the foot, or in any other part of the limb; except that the horse generally stood with the fetlock joint bent, resting chiefly on his toe. This was supposed to arise from some injury of the fetlock joint, as the position in which he stood tended to favour the ligaments of that part; at the

same time it was observed, that there was neither increased heat, swelling, nor tenderness of that joint. It was supposed, however, that the lameness was similar to that in the other leg; and, as firing had proved effectual in that case, it was thought proper to have recourse to it in this also. I was sent for to perform the operation; and, on my arrival, being informed that the foot, as well as every other part, had been already carefully examined—we proceeded immediately to the operation. The horse had been fired on the outside of the joint, and turned over, that the inside might be fired also. At this time, a little matter was observed issuing from a tranverse crack, or fissure, in the coronet. This immediately led me to suspect, that matter was confined under the sole. On paring it away, this was found to be the case; and so far had the matter penetrated, that it was found necessary to remove about one half of the horny sole. The same treatment was adopted as in the former case, and the horse gradually recovered. This case shows how necessary it is to examine every part minutely before a severe operation is resorted to; and may teach the young practitioner, that he should never trust to the smith on these occasions, but depend only on his own investigation.

# CHAPTER XXI.

## *On Lameness from Corns.*

THIS is a troublesome disease of the fore feet, which often occurs, and occasions various degrees of lameness. It consists in a bruise of the sensible sole, either from the pressure of the heel of the shoe, or from a contraction of the heel of the hoof. It is situate in the angle formed by the junction of the bar and crust, appearing as a red or dark-coloured spot in that part.

When a corn is recent, the red spot is but small; and it occasions very little, if any tenderness. The disease is not often attended to in this stage; and the cause, which originally produced it, is allowed to continue until the lameness becomes too manifest to escape observation. If the horse is not relieved at this period, by taking off the shoe, or removing all the pressure from the tender and inflamed part, suppuration takes place; and the matter, which is formed, soon bursts out at the coronet.

Horses most liable to corns, are those with

weak low heels and white feet. They occur more frequently in the inner than the outer heel, from its being more thinly covered with horn. We sometimes meet with corns, where the heels are strong and of sufficient depth; and, it is probable, they may be produced by improper management in feet of every description. I am inclined to believe, that corns are more frequently caused by the lateral pressure of the heels, than practitioners in general are aware of; that is, by the heel inclining inward, and being constantly forced in that direction by the pressure of the heel of the shoe, the inner surface of which is generally made to slope inward; but when the heel is thus inclined, or bent inward, as it were, the pressure it receives from the heel of the shoe, even when its surface is a plane, would tend to force it still farther in this direction, till, at length, the sensible parts become bruised; and, if the pressure is not removed, inflammation and suppuration soon follow*.

I have often seen the heel of the shoe, when it

* It is necessary to observe, that the bars are so constructed and situate, as to form a considerable obstacle to contraction of the heels: when the heels, therefore, are strongly disposed to contract, and, particularly, when assisted by the pressure of the shoe, the sensible parts must necessarily be bruised, being placed between the contracting and the resisting body.

has been suffered to remain on the foot a considerable time, imbedded, as it were, in the horn, without causing lameness or corn. This has arisen, perhaps, from the great strength of the horn in that part, and from the heel being sufficiently open and flexible, and free from any contractile disposition. There can be no doubt, however, that corns most commonly arise from the direct pressure of the heel of the shoe; the smith, therefore, should be extremely cautious in shoeing horses with low weak heels, which should never be touched with the buttress, but merely rasped, so as to have a level surface. He should be particularly careful of the inner heel; and, though it appear higher than the other, which it may, without being really so, on account of the position in which it is held when placed between the smith's thighs, it should merely be rasped, as we have directed. A corn exists in various degrees; at first, it is merely a small red spot, neither soft nor tender, and not productive of any apparent inconvenience. It is seldom observed at this period, and is allowed to proceed until the redness is more conspicuous, of a darker colour, and, upon pressing it with the finger, it will be found soft and spongy: in short, a corn is seldom observed until it occasions some degree of lameness or tenderness:

the shoe is then removed; and the red part, which is called the corn, and supposed to be the sole cause of the lameness, is cut out with a drawing knife, and the shoe put on again. The horn that has been removed, in drawing out the corn, and rasping the heel, causes a vacancy between the horn and the heel of the shoe, so that the tender part is for a time relieved from pressure, and the lameness apparently removed. After some time, however, the shoe bears down again upon the tender part, and the horse again becomes lame. By a repetition of this injury, the sensible part becomes so weakened, or diseased, as to be incapable of forming sound horn; and is, ever after, incapable of bearing even moderate pressure.

With respect to the prevention of corns, little need be said; it must consist in avoiding the causes by which they are produced; and these we have already pointed out. Corns, at an early period, may, no doubt, be radically cured; and, perhaps, the best method of effecting this is to take off the shoes, and turn the horse to grass; but as this is not often convenient, it must be attempted by strict and unceasing attention to the shoeing, and general management of the feet; taking care, that the tender heel is at all times kept free from pressure. When the redness of the horn has extended

forward, and the horn has become soft and spongy, it may be removed carefully with a drawing knife, and covered with a little tar ointment. If the heel is contracted, the foot should be kept moist by a bran poultice; and, if the corn has gone so far as to produce lameness, this is more particularly necessary. The horse should be allowed to rest until the horn has acquired its original strength. When a horse has been repeatedly lame from corns, we can expect only to palliate the complaint, and enable the horse to work with as little inconvenience to himself and rider as possible.

Several methods of shoeing have been proposed for this purpose. The object of all of them has, of course, been to protect the tender part from pressure. A bar shoe has been recommended, so formed as to bear on the frog, and all around the bottom of the foot, except the tender heel; where it is elevated, or so hammered, as to be at a little distance from the heel. With this shoe, the horse receives no pressure upon the tender heel, and is, therefore, relieved from his lameness. There are circumstances, however, in which this shoe is not so beneficial as might at first be imagined. The frog may be so tender as to be incapable of bearing the pressure of this shoe, or the heels so much deeper than the frog, that the back part of the

shoe cannot be brought to bear upon the latter; and even if it could, the frog is, in such cases, generally in a tender state, and incapable of sustaining much pressure. If the shoe does not rest on the frog, or the affected heel, a large portion of the circle will be without any bearing; and, though a horse may be relieved for a time by it, or as long as the affected heel is free from pressure, yet it is probable, that, by sustaining the weight of the body, aided by the impetus given to it by muscular exertion, as in trotting, the heel of the shoe will, in a short time, be in contact with the tender part, by the iron giving way, or bending under so immense a weight. Should the shoe, however, be made so strong, as to resist the weight of the body, without bending, it is scarcely possible for the nails to retain their situation. The bar shoe, therefore, under these circumstances, must be either ineffectual or insecure. But when the frog is sufficiently firm to bear the pressure of the shoe, it is certainly an effectual method of protecting the tender heel. The only inconvenience to which this shoe is liable, is the chance of a small stone, or gravel, getting between the corn and the heel of the shoe. On this account, some practitioners prefer the common shoe, with about an inch of the heel cut off, or as much as will leave the tender

part of the heel uncovered. When the frog is incapable of bearing the pressure of the bar shoe, this certainly is the best that can be applied. With respect to the common shoe, that has been so hammered, or filed, towards the heel, as to have no bearing upon the tender part, it cannot be effectual, as the weight of the horse, in trotting, would soon force it down upon the part which it was intended to defend from pressure.

When corns have been so neglected, that suppuration takes place, and the matter breaks out at the coronet, they are to be treated as we have directed for bruises of the foot.

# CHAPTER XXII.

## *On Lameness from Sandcracks.*

The term *sandcrack* implies a longitudinal fissure, cleft, or crack, in the hoof; beginning generally at the coronet: it happens most commonly in the inner quarter of the fore feet; and, when it occurs in the hind feet, it is generally in the front of the hoof. A sandcrack is sometimes superficial, arising from unusual dryness of the horn; so that the fibres, near the surface, spontaneously separate from each other. A deeper and more formidable sandcrack is produced by a strong tendency in the horn to contract, at a time when it is brittle and incapable of bending much. The disease may also be produced by a wound or bruise on the coronet. The superficial sandcrack is not productive of lameness; but should always be attended to, or it may gradually become deeper, till it extends to the elastic membranes, and occasions severe lameness. It is a common practice, in these

cases, to rasp away the surface of the hoof in the situation of the crack, and to open the latter with a drawing knife till the bottom of it can be seen; it is then often seared with a red-hot iron. When the crack does not extend to the coronet, a transverse incision is made with a drawing knife, or red-hot iron, above the crack, in order to prevent its spreading upwards. A similar treatment has been generally recommended for the deeper sandcrack, which extends to the sensible parts, or elastic membranes. In the earlier part of my practice, this was the mode of treatment I pursued; later experience, however, has convinced me, that it is not, in general, an eligible plan. Since the disease depends upon want of moisture and flexibility in the hoof, our first object is to restore that quality which the hoof has lost, which may be done by keeping it moist, by means of bran poultices, for a day or two; after which, the claw shoe should be put on. This, if properly applied, will prevent a farther contraction of the heel; and, if the crack is filled up with the following composition, and the horse turned to grass in soft, or even wet ground, the crack will gradually grow out, and the horse will be perfectly restored. Should it not be convenient to turn the horse out, the foot should be constantly stopped with soft clay, or a

mixture of clay and cow-dung, and the following ointment rubbed upon the coronet twice a day. This will cause new horn to grow down more speedily than it otherwise would, and of a most flexible kind. With respect to the superficial sandcrack, it will be sufficient to fill up the fissure with the composition, rub the ointment on the coronet, and keep the foot constantly stopped. It must be recollected, however, that stopping or moisture, however applied, is often injurious to the frog; that is, when it is in a soft, tender, or diseased state.

The tar ointment, in this case, will not only defend it from moisture, but tend to give it firmness and solidity.

### COMPOSITION FOR FILLING UP THE FISSURE IN THE HOOF.

| | |
|---|---|
| Yellow wax . . . . . . | 4 oz. |
| Resin . . . . . . . . . | 2 oz. |
| Common turpentine . . | 1 oz. |

To be melted over a slow fire, and stirred until cold.

OINTMENT FOR THE CORONET.

| | |
|---|---|
| Common tar . . . . . . | 1 lb. |
| Tallow . . . . . . . | 6 oz. |
| Yellow wax . . . . . . | 2 oz. |

To be melted over a slow fire, and stirred until cold.

Having described sandcrack in its more simple forms, and as it most frequently occurs, and pointed out the mode of treatment I have found in practice successful ; I shall proceed to the more complicated forms, where the lameness is more severe, and the cure more difficult.

Dirt or gavel sometimes gets into a sandcrack ; and, by irritating the sensible parts, causes great pain and inflammation. If this be not attended to, the elastic membranes become ulcerated, and throw up fungous flesh, which, being occasionally pinched or wounded by the sides of the crack, are a source of great pain and irritation. In this case, the crack must be freely opened with a drawing knife, and all dirt or gravel carefully removed. A little Friar's balsam is then to be poured on the parts, that have been thus laid bare, and the whole covered with the ointment for the coronet. (See above.) If the heel appear to be con-

tracting, or falling in, the claw shoe should be applied, and the hoof kept moist by means of a poultice, which will also promote the growth of new horn from the coronet. When the new horn has grown down about half an inch from the coronet, the horse may be turned to grass, where it will soon have got so far down, filling with horn as it descends, that the horse may return to his work without danger. Sandcracks in the front of the hoof are not often productive of lameness, and then require only to be filled up with the composition we have before directed, having previously removed any dirt that may have got in. In some instances, they are the cause of inflammation and lameness, in which case a poultice should at first be applied; and after two or three days, the crack may be filled with the composition, having previously poured into it a little Friar's balsam. If the lameness continue, the front of the pastern should be blistered.

In *treads*, as they are termed, that is, in wounds or bruises of the coronet, from the horse stepping upon it when the heel is turned up or caulked, there is often a division or cleft made in the top of the hoof. When this happens, without any considerable inflammation or swelling, Friar's balsam is the best application; but, if the coronet is much

bruised, a mixture of spirits of wine and vinegar is preferable. A pledget of old linen, wetted with it, may be kept constantly on the part. Should this prove ineffectual, it it probable that suppuration will take place; a poultice should, therefore, be applied until the matter is completely evacuated, and a clean sore left. This may be dressed, at first, with a solution of blue vitriol, and afterwards with Friar's balsam and digestive ointment. When the coronet has been much injured, it is ever after incapable of forming horn in that part; or, if it does form any, it is of a different kind from the rest of the hoof; so that there must always be either a vacancy, or perpetual crack, or a line of horn of a different and weaker kind than the rest. This is termed a *false quarter*, and is often productive of permanent tenderness. In shoeing a foot of this kind, the bottom of the hoof should be chambered off in that part, so that it may not bear on the shoe.

## CHAPTER XXIII.

### *On Lameness from Quittor.*

This disease is caused by a neglected wound or bruise in the coronet, or by a neglected wound or bruise in the bottom of the foot, or lower part of the elastic membranes, as in pricks in shoeing. When these accidents are not properly attended to, the matter penetrates in various directions; sometimes affecting the cartilages of the foot, causing them to enlarge and become bony.

Quittor may be considered as a fistulous sore of the coronet, extending in different directions; the external sore is generally towards the heel, and is seldom met with in the front of the coronet. The opening of the quittor is generally small, so as to admit only of a common probe passing in. On examining with a probe, we often find the sinuses, or pipes, as farriers term them, running to a considerable extent. Sometimes the probe can be passed down upon the cartilages; at others, downwards under the hoof, or towards the front,

affecting the exterior tendon. The most favourable cases are those where the sinus extends laterally towards the heel. The most unfavourable are such as extend downward and inward, as they often spread to the joint formed by the articulation of the small pastern and coffin bones. The only effectual method of curing quittor is to force into the sinuses some powerful caustic; and though, in introducing the caustic, and forcing it to the bottom of the sinus, we give the animal considerable pain, we must not be deterred from doing it effectually. Crystallized verdigrise is often employed for this purpose; but, after giving a fair trial to all the caustics, I am of opinion, that corrosive sublimate deserves a preference. The best mode of applying it is to roll up a little of it, grossly powdered, in silver paper: by twisting the paper, it may be made rather stiff, and brought to a point, so that it may be readily introduced into the orifice of the sinus: when it can be got no farther in this way, all that remains out of the sinus is to be cut off with scissors, and that portion, which is within, is to be forced to the bottom with a strong probe of whalebone: another portion is then to be introduced, and forced down in the same manner; in short, the sinus is to be nearly filled in this way. This severe treatment will,

of course, cause considerable pain and inflammation; to moderate which, a poultice may be applied, should it be found necessary. After a few days, a slough, or *core*, as the smith terms it, will be separated, leaving a large orifice, but with a red, healthy appearance. If this dressing has been properly managed, the horse will often gradually get well, merely by dressing it with Friar's balsam and digestive ointment. When the lameness continues after this, and the sinus does not appear to fill up, but continues to discharge matter, a repetition of the caustic is necessary; after which, that is, as soon as the slough or *core* which it occasions has separated, it may be dressed with either of the preparations, marked N° 1 and 2, in the chapter on *Canker*. The caustics used by farriers in this disease are of a very heterogeneous nature; consisting of blue vitriol, burnt alum, verdigrise, sublimate, &c.

## CHAPTER XXIV.

### *On Lameness from Strains or other Injuries of the Coffin Joint.*

This joint, and the parts connected with it, may be injured in various ways: we have already shown, that it is sometimes wounded by the horse stepping on a nail, (see *Wounds of the Foot;*) and that, in quittor, the sinus occasionally extends to it, (see vol. i, plate 2;) but the injury we wish to notice in this place is that which is commonly termed a strain of the coffin joint. This accident generally happens from a violent and unexpected exertion of the part. If a horse, for example, takes a high leap, and pitches equally on his fore feet, such is the elasticity and strength of the parts, that no injury ensues; but, if he happen to pitch with his toe on a stone, it is evident that the ligaments of this joint will be unusually extended, perhaps ruptured, or some of the vascular membranes connected with the joint may be broken; in either case, inflammation will follow in a degree proportionate to the extent or violence of

the injury. In several instances, I have known this accident happen by very moderate exertion, and even while a horse has been walking. When the injury is considerable, and the inflammation runs high, the foot becomes unusually hot, and very severe lameness is produced; but, more commonly, the injury is not so considerable, and the inflammation so moderate, that scarcely any unusual heat can be felt, and the lameness is not very conspicuous, except when the horse is trotting. This lameness is very often said to be in the shoulder, because there is no very palpable symptom, or appearance, by which the nature of the injury is indicated. The only circumstances that appear likely to distinguish this complaint are,

1. The lameness is more apparent when the horse is going up a hill.

2. In standing, the pastern is not so oblique as the other.

3. The lameness comes on rather suddenly.

4. Nothing can be found in any other part of the limb to account for the lameness.

5. The lameness generally continues in the same degree, particularly when no remedies are used, or when they are applied to the wrong part, which is often the case.

This kind of lameness can be removed only by

an early application of the proper remedy, and that is a blister. If the foot is unusually hot, it should be kept constantly moist with a poultice. The horse should be turned loose into a box, with a *cradle* about his neck, to prevent him from biting and blemishing the blistered part. The blister should extend from the coronet to about six inches above the fetlock joint; and, if the first blister do not remove the lameness, it must be repeated even three or four times*. Should the horse appear to get sound, he must not be too hastily put to work, as the lameness in that case is very apt to return. It is, at best, an obstinate lameness, and often proves incurable.

* When a part is blistered more than once, the first blister should be washed off with soap and water, having previously oiled or greased it, about the third day after its application. It is advisable, also, when it is found necessary to repeat blistering several times, to use the mildest composition; such as No. 4, vol. i.; or the following, which is more simple: Take of lard 8 oz., yellow resin 1 oz.; melt them together; and when fluid, but not very hot, stir into the mixture 1 oz. and a half of cantharides, recently powdered. Continue stirring until the ointment is cold.

## CHAPTER XXV.

### *On Strains.*

THE term *strain* is supposed to imply, the extension of a part beyond its natural power. Tendons, or sinews, for example, were considered as bodies endued with a certain degree of elasticity; that, when moderately stretched, would return to their original length, as soon as the power which extended them was removed, like a piece of elastic gum or Indian rubber; but, if they were stretched beyond this point, their elasticity would be so impaired, that they would be incapable of contracting to their original length. This is commonly supposed to constitute a strain. The sinew is said to be overstretched and relaxed; and it is thought, that, by applying certain liquids to the parts, they penetrate through the skin, and so stimulate the relaxed tendon, as to restore it gradually to its original power. Unfortunately, however, for this ingenious hypothesis, it has been clearly proved, by experiment, that tendons, or sinews, are not capable of extension; and, when we consider the

office they perform in the animal economy, it must evidently appear, that such a property would be highly disadvantageous.

The flexor tendons, or back sinews, as they are commonly termed, consist of two tendons: the innermost is a large tendon, which, after passing down over a slippery groove, on the back part of the fetlock joint, is firmly implanted into the bottom of the coffin bone: the other tendon completely surrounds this, forming a sheath for it; but does not accompany it farther than the pastern bones, into both of which it is firmly implanted. Between these tendons, a slippery fluid is constantly formed, which not only prevents their cohesion, but enables them to move more readily upon each other. In several parts, however, we may observe membraneous bands passing from one tendon to the other. In violent exertions, these membranes, probably, are sometimes ruptured: hence arises a greater or less degree of inflammation, causing increased heat, swelling, and tenderness. This is what is commonly termed a strain of the back sinews.

Ligamentous strains are supposed also to consist in a preternatural extension of some ligament; but these, in general, like tendons, are not capable of stretching; particularly the capsular ligaments,

which surround the heads of bones, firmly uniting them to each other, and constituting a joint. The great ligament of the neck is highly elastic, and admits of considerable extension; but I have never seen or heard of a single instance where it was overstretched or strained. The suspensory ligament, also, which is situate under the back sinew, appears to be elastic, but I have never known it strained. I believe, however, it is sometimes broken; and that the vascular membranes connected with it are sometimes injured, causing increased heat, swelling, and tenderness externally, and often very severe lameness. The only instance in which the term *strain* seems to be properly applied is in certain injuries of the shoulder, which is connected with the body by means of strong muscles, or flesh, as it is commonly termed; these are highly elastic, and possess a wonderful power of contracting or shortening themselves, as well as a capability of being extended. In violent exertions, these muscles may sometimes be overstretched; and the injury, in this case, is very properly termed a strain.

## CHAPTER XXVI.

### *On Lameness from Strain or Injury of the Back.*

THE lameness produced by injuries of this kind are often incurable, particularly when the ligaments, by which the vertebræ or bones of the back are connected, have been ruptured. These accidents are not very unfrequent, and happen sometimes from apparently trifling causes. In staling, for example, when the horse has been standing on slippery pavement, I have known the hind feet slide backward, by which the ligaments of the spine were ruptured, and the spinal marrow so affected, that it was found necessary to shoot the animal. I have known the same accident happen from a horse rising suddenly when lying under the bail in a barrack stable. A similar accident occurred to a troop horse during a field-day, without any unusual exertion. When the injury is not so extensive as to hurt the spinal marrow, it does not affect the general health of the horse, but the lameness is very remarkable, and can scarcely be mistaken. There is a staggering kind of motion in

the hind parts; the horse, in trotting, appears as if he had a new joint formed in the back, which admitted of considerable motion laterally; or the hind parts appear as if they were but loosely connected with the body. An injury of the muscles of the loins will produce the same kind of lameness, and is not easily distinguished from it; but, in both cases, the same treatment is applicable. When the injury is recent, the loins should be covered with fresh sheep-skins; and, if these cannot be procured, the following embrocation may be well rubbed upon the loins twice or three times a day, having previously fomented the part with woollen cloths, wrung out of water as hot as can be borne by the hand. When the ligaments of the spine have been injured, the lameness generally proves incurable. Blisters, warm plasters, setons, and even large issues, made by caustics, have proved ineffectual. When the injury is confined to the muscles of the loins, the horse may recover by means of the embrocation and rest.

EMBROCATION.

| | |
|---|---|
| Oil of turpentine . . . | 3 oz. |
| Camphor . . . . . . . . | 1 oz. |
| Olive oil . . . . . . . . | 5 oz. |

Mix.

## CHAPTER XXVII.

*On Lameness from Strain or Injury of the Hip Joint, commonly called,* Whirl, or Hurdle Bone, or Round Bone.

THESE are accidents which, according to my experience, very rarely occur, though farriers attribute about nine tenths of the lamenesses which happen in the hind parts to this kind of strain, except it arises from pricks in shoeing, or any very palpable cause. I do not believe that this joint is liable to be injured by the most violent exertions; but if a horse, when going fast, happens to fall on his side, the head of the thigh bone may be forced from its situation, or its neck fractured; in either case, the lameness is incurable. I believe we may venture to assert, that, in every case of lameness, from an injury of the hip joint, blistering and rest are the only things likely to do good, unless there be any wound, or bruise, of the external parts; in which case, it must be treated accordingly.

I have met with cases of lameness, occasioned

by an injury of the great trochanter, as it is termed, of the thigh bone. This part forms a considerable projection at the head of the bone, and is much exposed to injury when a horse falls on his side. I have two thigh bones in my possession, in which this part is covered with bony excrescences.

## CHAPTER XXVIII.

### *On Lameness from Strain or Injury of the Stifle Joint.*

THIS lameness does not often occur, and may be distinguished by increased heat, tenderness, or swelling of the part. Sometimes, however, it is not so easily distinguished, and can be discovered only by the pain the animal suffers in moving this joint.

The stifle joint is often *falsely* accused of being the seat of lameness, but by no means so frequently as the hip joint. In all cases of lameness in the stifle joint, a blister is the best remedy; which it is generally necessary to repeat three or four times, bathing the part frequently with the following lotion during the interval between each blister; and allowing the part to be perfectly free from the effect of one blister before another is applied.

COOLING LOTION.

| | |
|---|---|
| Acetate of lead . . . . | 1 oz. |
| Vinegar . . . . . . | 4 oz. |
| Soft water . . . . . | 1 quart. |

Mix.

The horse should be kept loose in a box, or large stall, during the operation of the blisters; after which he should be turned to grass, and allowed at least a month's run*.

* It may be proper to observe, that, though blistering is recommended as a general remedy for lameness in the stifle, yet, whenever the part feels hot and tender, the above lotion should first be applied, until the heat and tenderness are in a great measure removed.

# CHAPTER XXIX.

## *On Lameness from Curb.*

THE term *curb* implies a swelling on the back part of the hind leg, about five or six inches below the point of the hock. It is seen most distinctly in a side view; but, when the swelling is considerable, it is easily perceived in any direction. This disease is generally caused by violent exertion; it happens more frequently to young horses, than such as are arrived at maturity, and is particularly liable to occur when the hock is badly formed; as in horses that are *cat-hammed,* as it is termed; that is, having the hocks inclining inwards and the hind legs standing too much under the body. Horses of this description are generally very active, and may carry a light weight very pleasantly without being injured; but, when overweighted, and particularly if employed much in leaping, a curb or spavin is almost always the consequence.

A curb is generally productive of lameness, and sometimes feels very hot and tender; but as the disease is deeply seated, mild applications do no

good, and it is always advisable to have recourse at once to a blister. I have frequently employed the following liquid blister with success, in a manner we shall presently describe. When the lameness is perfectly removed, many practitioners recommend firing, in order to prevent a return of the complaint; and I am inclined to believe that they are right, having, in several instances, seen the lameness return when blistering alone has been trusted to, but very rarely after firing; and when this operation is skilfully performed, the blemish it leaves is scarcely perceptible. A swelling often remains on the part, though the lameness has been completely and permanently removed. (See *Firing*.)

### LIQUID BLISTER.

No 1.

| | |
|---|---|
| Take of cantharides recently powdered . . . . . . | 1 oz. |
| Euphorbium, powdered . . | ½ oz. |
| Oil of turpentine . . . . . | 4 oz. |

Mix, and let them stand two or three days in a wide-mouthed bottle, well corked. The liquid part is then to be strained off, and put into another bottle. The cantharides are to be returned into the first bottle, and again infused,

for three or four days, in a mixture of 4 oz. of spirit of wine, and 2 oz. of the water of pure ammonia; frequently shaking the bottle. The liquid is then to be strained off, and mixed with the first, which will form a powerful liquid blister.

No 2.

| | |
|---|---|
| Cantharides, recently powdered, | 1 oz. |
| Corrosive sublimate, powdered, | 2 dr. |
| Spirit of wine . . . . . . . | 6 oz. |
| Compound spirit of lavender . | 2 oz. |

Mix, and let them stand about a week, often shaking the bottle: the liquid is then to be strained off, and preserved in a bottle well corked.

No 3.

| | |
|---|---|
| Cantharides, recently powdered, | 1 oz. |
| Spirit of wine . . . . . . . . | 6 oz. |
| Water of pure ammonia . . . . | 2 oz. |

Mix. Let the bottle in which the mixture is put be frequently shaken; and, at the end of a week, the liquid part may be strained off for use.

The blister N° 1 is the strongest; but they will all be found very active, when properly prepared, and used according to the following directions: The hair is to be cut off as completely as possible from the part intended to be blistered; and, to defend the lower part of the leg from the action of the blister, which may accidentally run down, it may be smeared with hog's lard. About a table-spoonful of the blister is then to be well rubbed on the curb, by small portions at a time; and the horse's head afterwards secured to the rack, to prevent his biting the part. The following morning another table-spoonful of the blister is to be rubbed upon the curb, unless the first should have occasioned very considerable inflammation, which is rarely the case: most commonly, indeed, it is found necessary to repeat the operation the third morning also, to produce a sufficient effect. Considerable swelling will soon take place in the surrounding parts, often extending to the hock and to the lower part of the limb. There will be a considerable exudation of glutinous matter from the surface of the curb, forming, when dry, a complete scab upon the part. When the effect has gone thus far, all the swollen parts are to be frequently bathed with the following cooling lotion, and the horse led out for exercise twice or three times a day.

He should not be tied up when in the stable, but turned loose into a box, or large stall, with a cradle about the neck to prevent his biting the blistered parts. In favourable weather, it is better to turn him to grass. This scarcely ever fails of curing the curb for a time; but firing may be necessary after the effects of the blister have been completely removed, to render the cure permanent. When this lameness occurs to horses with ill-formed hocks, and the owner's weight is considerable, the most prudent plan, perhaps, is to sell the animal as soon as the lameness is removed.

### COOLING LOTION.

| | |
|---|---|
| Take of Goulard's extract . | 1 oz. |
| Vinegar . . . . . . . . . | 4 oz. |
| Rain water . . . . . . | 1 quart. |

Mix.

## CHAPTER XXX.

### *On Lameness from Strains or other Injuries of the Parts connected with the Fetlock Joint of the Hind Leg.*

These parts are frequently injured in violent exertions, and the lameness that ensues is sometimes very obstinate, particularly in the hind leg. It may be thought extraordinary, that we should treat of lameness in the hind fetlock joint separately; but there are certainly some peculiarities in this kind of lameness, which render such an arrangement desirable. The weight thrown upon the ligaments, which support the fetlock joint, is greater than can be readily conceived by a person who has not considered the structure of this part. In the fore leg, the limb is perfectly straight from the elbow to the fetlock joint: here it becomes oblique; and it must be evident, from the position of the pastern, that, when the horse is galloping or leaping, the whole weight of the body must occasionally be supported by the ligaments of the fetlock joint. When the horse is standing, the ligaments of the

fore leg have a greater weight to sustain than the hind leg; but, in galloping or leaping, when the fore parts are raised from the ground, the ligaments of the hind fetlock joints not only support the body, but serve also as a fulcrum or fixed point, for those powerful muscles to act upon, by which the body is propelled forward; the force of which, perhaps, exceeds the weight of the body. The ligaments of the hock joint are also materially concerned; and it is by no means an unusual occurrence for both these joints to be injured at the same time. When a horse becomes suddenly lame, from violent exertion of this part, there is generally considerable swelling, with increased heat or tenderness about the joint; but the mischief often comes on more gradually. The horse is first perceived to be weak in the joint, favouring it in the stable by standing on his toe, and often knuckling, as it is termed; by which is meant a sudden bending forward of the fetlock joint, the front part approaching the ground. In recent injuries of the fetlock joint, when the parts are swollen and inflamed, feeling hot and tender, a linen bandage is to be applied, and kept constantly wet with the cooling lotion. It will be found necessary to wet the bandage frequently, as the increased heat of the part causes a quick evaporation of the moist-

ure; and, as the bandage cannot well be moistened during the night, it will be proper to take it off, for a dry bandage may do harm. By continuing this plan a few days, the inflammation will have subsided; the parts will have become cooler and less tender; and the horse will probably be free from lameness. Were the horse put to work at this period, however sound he may appear to be, the lameness would, in all probability, return, and prove much more difficult to remove than it was in the first instance. It is always advisable, therefore, in these cases, to allow the horse a month's rest at least; and, if the lameness is not perfectly gone off, after using the cooling lotion about a week, a blister should be applied, and repeated if it be found necessary. When these parts have been repeatedly injured, firing and a long run at grass are the only remedies likely to do good, and these often fail of effecting a permanent cure.

# CHAPTER XXXI.

## *On Windgalls.*

WINDGALLS are small elastic tumours immediately above the fetlock joint, and on each side the back sinew. They appear to have obtained their name by being supposed to be filled with air or wind; but they contain a fluid similar to synovia, or joint oil. When windgalls are so considerable as to cause lameness, firing, blistering, and a long run at grass, are the only remedies. When they exist in a less degree, and do not occasion lameness, and particularly if the horse cannot be conveniently turned out, or taken from his work, the following embrocation may be well rubbed upon them twice a day. A bandage, when properly applied, has often been found useful.

### EMBROCATION.

| | |
|---|---|
| Take of camphor . . . | 1 oz. |
| Oil of turpentine . . . . | 2 oz. |
| Olive oil . . . . . . . . | 5 oz. |
| Water of pure ammonia . . | 1 oz. |

Mix.

When a horse has been blistered for windgalls, I have sometimes applied what is termed a *charge* before he was turned to grass, and I think with good effect. The horse must be suffered to run with it until it drops off spontaneously. It seems to act as a durable bandage on the part. The composition for a *charge*, or adhesive plaster, and the method of applying it, may be found in the second volume. Some authors have pretended, that it is practicable to dissect out the windgalls without doing mischief, and even with a prospect of advantage; but such an assertion is too absurd to be any farther noticed.

# CHAPTER XXXII.

## *On Lameness from Strains or other Injuries of the Shoulder.*

THE shoulder joint is differently constructed from all others, that is, the shoulder blade is joined to the body by means of powerful muscles, whereas all the other joints are formed by the union of two bones, by means of a strong inelastic substance, termed ligament. The utility of this contrivance will readily appear, when we consider the extensive motion required in the shoulder blade, and the intolerable concussion all the fore parts must have suffered, had it been differently constructed. Though lameness is frequently attributed to some injury of the shoulder, it is a disease which seldom occurs; and is so well marked, that it cannot easily be mistaken. It is unnecessary to say any thing more of muscular injuries of the shoulder, as the subject has been fully treated of in the first volume: I shall, therefore, only add, that I have found blistering the whole of the shoulder of great service when the lameness has not gone off, or considerably diminished, in a week or ten days; and

that, though swimming has been recommended as a sovereign remedy for lameness in the shoulder, I have seen it very fairly tried without doing the least good. It is worth remarking, that the horse, on which this experiment was made, got sound, after some time, simply by rest. I have seen horses attacked with lameness in the shoulder after travelling some time in muddy roads. The friction of the dirt thrown up between the arm and the chest sometimes irritates and inflames the skin of that part, causing great stiffness, so that the horse feels difficulty and pain in moving the limb. This is readily cured by washing the part frequently with the Goulard lotion, that is, 1 oz. Goulard's extract to 1 quart of water. When the heat and tenderness are gone off, the Goulard ointment is proper.

There is a part of the shoulder, however, which is sometimes injured, and has not been spoken of in the first volume; that is, the joint formed by the union of the shoulder bone with the shoulder blade. This part projects considerably*; and is, on this account, liable to blows. Here the nature of the injury is sufficiently manifest; and, if con-

* The part which projects is a large process, which arises from the head of the humerus, or shoulder bone; and, though the joint lies much deeper, it may be materially injured by a violent blow on this projecting part.

siderable, requires bleeding, purging, and fomentations; but, in slighter cases, fomentations will be sufficient, until the inflammation has abated, and then the embrocation recommended for windgalls may be rubbed upon the part. This joint is liable to strains or injuries of the ligaments from sudden and violent exertions. In this case, fomentations may at first be employed, and after them a blister; but when the injury is considerable, bleeding and purging are also necessary.

## CHAPTER XXXIII.

### *On Lameness from Bone Spavin.*

BONE spavin consists in a bony enlargement on the inside and at the lower part of the hock; at first it is generally very small, and not easily perceived, unless it is by a careful comparison of the two hocks. The swelling does not always feel hot, nor is it uniformly tender; most commonly, indeed, the horse will allow it to be handled freely. The swelling sometimes continues in this state a considerable time: the lameness being inconsiderable, and wearing off after a little exercise, it is not thought worth while to apply any remedy, and the horse is made to continue his work. Sooner or later, however, the swelling enlarges and spreads upward, the lameness increases, and the horse works with difficulty, proving very stiff and lame when first led from the stable the morning after a journey. When the disease has been suffered to proceed thus far, it generally proves incurable; and the only chance of removing the lameness is to apply the actual cautery, that is, fire the part

severely, and blister immediately after. The same observation is applicable to all cases of bone spavin that have not been attended to at an early period; but, with respect to the incipient bone spavin, I think it may frequently be cured by firing moderately, and blistering immediately after. In many instances, I have found this succeed completely. I have occasionally employed caustics in bone spavins, but the result has not been so favourable as I expected; and, as they may do considerable mischief in unskilful hands, I would by no means recommend them*. With respect to the prevention of spavin, I have to observe, that the disease may be traced most commonly to one of the following causes:

1. Hard riding, particularly leaping, when too young for the exercise.

2. Weak, ill-formed hocks, inclining inwards, like those described under the head *Curb*. If, in horses of this kind, the outside heel of the shoe is turned up, and the inside heel made of the ordi-

* I have been lately consulted in a case of spavin, where a farrier had attempted to cure it by a composition of which arsenic appeared to be an ingredient. It caused violent inflammation and sloughing; and the whole joint is, at this time, so highly inflamed, that the horse will, in all probability, be destroyed.

nary thickness, the inward inclination of the hocks will be increased, and an undue degree of pressure thereby made upon the small bones composing the inside of the hock: as these bones rest upon the head of the inner splent bone, the mischief this occasions generally begins at that part.

3. A tendency in the constitution from some unknown cause to generate superfluous bony matter.

From these circumstances, it must be sufficiently obvious, that the only plan we can adopt for preventing spavin is to work young horses moderately, and not use them in hunting, or any laborious employment, until their joints and other parts have acquired sufficient firmness for such exertions. In the next place, we should take care that the heels of the hind shoe are always made equal, (excepting in cases of cutting; see *Cutting*,) particularly in horses whose hocks incline inwards. We should also be cautious not to place too much weight on such horses, as this alone would probably cause spavin. I know no method of preventing that morbid generation of bony matter, which constitutes the last cause we have assigned for spavin.

Horses incurably and badly spavined are often

capable of doing a great deal of work, particularly in agriculture. When first taken from the stable, they are exceedingly lame; but, by exercise, they gradually get better; and, after a short time, go tolerably well.

## CHAPTER XXXIV.

### *On Lameness from Splents.*

In general, splents are not productive of lameness; and though, during the time of their formation, or soon after, the inflammation then existing causes the horse to go lame, yet this gradually wears off, and no after inconvenience is felt: the splent, however, generally remains. But it sometimes happens, that a splent is so situate as to interfere with the suspensory ligament, and at others, but more rarely, with the back sinews; in either case, it is proper to attempt their removal, as they are commonly, in such cases, productive of lameness. I by no means approve of those violent remedies, that have been often recommended; and though, in the first volume, the old plan of bruising, puncturing, and blistering the part, has been recommended, or rather spoken of, as a remedy; yet I have, in several instances, seen much mischief done by it, particularly in unskilful hands; but, however nicely it is done, it often leaves a permanent enlargement of the leg. It is certainly the most effectual method of removing the splent;

but it causes, in general, so much inflammation and swelling in the surrounding parts, that there is danger of the remedy proving worse than the disease. When this plan is adopted, the cold lotion should be kept constantly to the part as soon as the blister has operated. The following is the method I have practised for several years, and in general with advantage, that is, it puts a stop to that ossific inflammation by which the splent is produced; and which is, in many instances, the cause of the horse's going lame, as we have observed in the former part of the chapter; and it often diminishes, and sometimes removes, the swelling. Let the hair be closely cut from the part, and the liquid blister recommended for curb well rubbed upon it. At night, supposing the first to have been applied in the morning, let another portion be rubbed in. On the following morning, the part will be found swollen and covered with a glutinous crust; but if this effect has not been produced, it must be rubbed in a third time. The next morning, the Goulard lotion should be used, and applied as frequently as possible: the best method is to keep some old linen, several times folded, constantly wet to the part. If the swelling extend to the other parts of the leg, these also should be kept wet by means of a linen

bandage. It will be proper, at night, to take off all this, as it would then get dry, and do more harm than good. After a few days, or a week, the inflammation and swelling, will have subsided, which will afford an opportunity of observing, whether the splent is diminished or not; and, about this time, the horse may be led out, and have walking exercise, twice a day. I have often seen lameness attributed to splents, when, upon a careful examination, it has proved to be in the foot; and whenever a horse is brought to me with this complaint, I think it necessary to examine the foot, particularly if there be neither heat nor tenderness in the splent, or if its situation be not evidently such as to affect the ligament or tendon; and I can truly say, that, of the numerous cases of lameness, that have occurred in my practice, which have been attributed to splent, not above one in twenty has been really owing to this cause. I have thought it necessary to dwell thus long upon the subject, because it is a very prevailing error, that splents often cause lameness, and an error of importance; for, while the attention is occupied with the splent, the real disease escapes notice, and the horse is unnecessarily punished. With respect to the prevention of splents, I believe we know nothing about it: there seems

to be a tendency, in all young horses, to throw out superfluous bony matter in this part; nor are we acquainted with any method of correcting this tendency. It has been supposed, by Mr. Coleman, that, by the inner heel of the shoe being usually made thinner than the outer, and by the inner heel of the hoof being generally made rather lower than the other, a greater portion of the animal's weight is thrown upon the inner splent bone than otherwise would have been; and that, in consequence of this undue pressure, superfluous bony matter is generated. Whether this be the case or not, it is certainly proper to keep the heels of the shoe and the hoof level.

## CHAPTER XXXV.

### *On Lameness from Ringbone.*

THE bony excrescences on the pastern, which constitute ringbone, are not always productive of lameness; this happens only when they are so situate, as to interfere with the motion of the small pastern or coffin joint: in the latter situation they occasion more considerable lameness than in the former. I have, in several instances, known horses have ringbones on the hind pastern without suffering the slightest inconvenience from them; and the last I met with went through the hunting season without any appearance of lameness. I have found, that the only chance we have of curing ringbone, or the lameness arising from it, is a free application of the actual cautery, and blistering immediately afterwards; and even this will not succeed, if the ossification has gone so far as to fix the ends of the bones, or glue them, as it were, together, so that the motion of the joint is completely lost. It is necessary, therefore, when a horse is observed to be lame from this disease, to have recourse at

once to firing: I would by no means advise trusting to a blister alone; for though it may, sometimes, at a very early period, succeed, there is even then a chance of the lameness returning. When blistering is employed, it should always be repeated two or three times, washing off each blister about the third day after its application, and keeping the part cool in the interval, with the Goulard lotion.

With respect to the prevention of ringbone, very little can be done; and the only preventive means we have in our power will appear when the causes of the disease are pointed out. We often find ringbones accompanied with hard, dry, thick hoofs; the heels very deep; and the pastern upright, as it is termed, that is, nearly in a line with the leg, or almost perpendicular. I do not mean to say, that the great depth of the heels of the hoof is the cause of this straightness of the pastern, but no doubt it materially contributes to it; and it is equally clear, that, if the heels were kept of a proper depth, and thin-heeled shoes worn, the evil would be in some degree corrected, and the disease perhaps prevented, particularly if the feet were in other respects properly attended to; for they have generally a greal deal of superfluous horn, and a tendency to heat and dryness. It will

be readily seen, that, in horses with straight pasterns, the principal spring of the fore parts, next to the shoulder, is lost, and that the bones of the pastern must necessarily suffer, more or less, from concussion. We may not be able, perhaps, to do much, in correcting this position of the pastern; but the little we can do will probably be of service, and ought always to be attempted.

## CHAPTER XXXVI.

### *On Lameness from Rheumatism.*

This disease does not often happen to horses; and, when it does, is not easily distinguished. I think the following circumstances may afford some assistance in ascertaining when a horse's lameness is occasioned by rheumatism. The lameness comes on rather suddenly, and often without any apparent cause; sometimes, however, we may trace it to exposing the horse to rain, or a cold wind, after having been rode hard: in this case, the attack is generally violent, amounting to what is termed a *chill;* all the limbs seem to be more or less affected, though, after a day or two, it fixes more particularly in one. When rheumatism attacks without any evident cause, it is less violent, generally only in one limb; but the lameness is often considerable at first, and commonly soon gets better, or even disappears. Sometimes, I have observed that the foot of the affected limb is colder than the other: this, indeed, has in many instances occurred. In some cases, swellings take

place about the joints or tendons, which are extremely painful: this symptom, however, does not often appear.

When rheumatism attacks with violence, and particularly when it affects more than one limb, the horse should be bled plentifully and take a purgative, the dose to be proportioned to his strength. But, in milder cases, where one limb only is affected, the purgative will be sufficient. If any swelling appear, and it feel hot and tender, fomentations are proper; but when there is no tenderness, some stimulating embrocation is to be applied, and, if this do not succeed, a blister.

I have never seen any good effect produced by the medicines usually employed in the human subject, such as antimonials, camphor, opium, &c., though I have repeatedly tried them; and am convinced that a purgative is the only useful medicine.

As rheumatism is a disease that does not appear to be well known, and has not been described by any modern author, I will conclude the chapter with three cases, which have occurred in my practice, and were noted down on account of their being so clearly marked.

### CASE I.

A dragoon-horse became lame rather suddenly; a swelling and unusual heat were observed on the back part of the leg, a little above the knee. The pain and lameness were very considerable. The swelling increased, extended, and was exceedingly tender. It felt as if distended with some fluid, which appeared to be confined by a strong membrane, termed fascia, which serves to bind down the muscles of that part. As the animal was suffering great pain, I punctured the swelling with a lancet; when a yellowish transparent fluid issued out, and was forced to about a yard from the orifice. After completely evacuating the cavity, the orifice was closed by adhesive plaster, an extensive blister applied, and a dose of physic given. The pain and lameness, however, continued a considerable time, and it was found necessary to repeat the blister twice. The horse was then sent to grass, and, about six weeks afterwards, taken up sound.

### CASE II.

A small well-bred mare, between three and four years old, during a ride, became suddenly

lame in the fore leg; the rider got off, but could find nothing to explain or account for the lameness; he therefore mounted again, and, upon trotting her, found that the lameness was gone off. She was ridden a few miles, and went perfectly well. The next day, however, she was again found to be lame when first led from the stable, and in a very considerable degree. Suspecting some injury of the fetlock joint or shoulder, embrocations were rubbed on those parts, which did no good. She was allowed to rest two or three days, but did not get better. A purgative was then given, which did not prove strong enough; two days after, another purgative was given, which operated briskly. The lameness was now considerably diminished, and, after a few days, went entirely off.

CASE III.

A coach-horse was suddenly taken lame in the hind leg. After he had been in the stable some time, the lameness was so severe, that he could scarcely move the limb. There were a little swelling and heat about the hock, but by no means sufficient to account for so violent a lameness. Having examined every part carefully, particularly the foot, without discovering any thing, I con-

cluded it must be rheumatism, and therefore gave a purgative. Though a moderate dose, it operated very powerfully: but, soon after the purging began, the lameness abated considerably, and in about twelve hours totally disappeared. The next day, the horse was quite free from lameness; but the purging continued, and was so excessive, that it appeared prudent to restrain it; which was done by giving frequently about a quart of the mixture of arrow-root boiled in water in the usual way. Soon after the purging had ceased, the lameness returned; not, however, in so great a degree as at first, but it was still considerable. We now had recourse to antimonial powder, camphor, and medicines termed diaphoretic; and though no swelling could be perceived in the limb, for even that in the hock had disappeared, warm embrocations were rubbed on it. Finding the lameness continue, though this plan was fairly tried for three days, I was induced to give another purgative, about two thirds the strength of the first. This also operated with great violence, and the lameness again went off. The purging was considerable, and continued all the second day; on the third day it ceased, and the horse was again lame, but in a much less degree. The proprietor was now anxious to have the horse sent to Salisbury;

as it was the summer season and fine weather, there appeared no objection; and I was informed soon after, that, when he arrived at Salisbury, he was perfectly sound; and, upon inquiring twelve months after, I found the lameness had not returned.

# CHAPTER XXXVII.

## *On Lameness from Cutting.*

In cutting, a horse sometimes strikes himself so severely, as to cause lameness for a short time; but it soon wears off, and he goes on again very well, until the blow is repeated. It is not often, however, that this severe kind of cutting occurs; sometimes he merely brushes off the hair: but, in whatever degree this imperfection may exist, it always lessens a horse's value, and should therefore, if possible, be prevented. The directions given on this subject in vol. i, will, in general, I believe, be found successful, if carefully executed; but cases sometimes occur where that plan certainly proves ineffectual. Several years ago, on an occasion of this kind, I was induced to try a method suggested by Mr. Morecroft, which is quite the reverse of that recommended in vol. i; but it proved successful: and in two other instances I have found it succeed, but do not consider it as a plan that ought generally to be adopted, for in an equal number of cases I have known it fail; and,

by making the inner heel lower than the outer, an undue portion of the animal's weight is thrown upon the inner part of the leg, which may do mischief. The following is Mr Morecroft's explanation of the principle on which he supposes it to act.

"When a horse is at rest, he supports his weight equally on both feet, but having the inner heel and quarter raised, when one foot is elevated, he must be supported obliquely on the other, and hence have a tendency to fall outwards; to prevent which, he brings the moving foot nearer the supporting one, by which he strikes it: but by elevating the outer instead of the inner side of the supporting foot, we necessarily give it a disposition to lean inwards, and fall to the inside, which will throw the moving farther from the supporting foot."

This explanation is certainly ingenious; and where the other plan fails, it may be worth while to give it a trial. Horses sometimes cut merely through fatigue; from being ridden hard when they are out of condition, and unfit for such exertion: in such cases, if they have struck themselves so as to cause inflammation and swelling about the fetlock joint, it should be frequently bathed with Goulard lotion, and the horse allowed to rest until perfectly recovered. When every me-

thod of preventing cutting is found to fail, the horse must be rode with some leather buckled round the part, which is commonly termed a boot, by which it will in some measure be defended.

# CHAPTER XXXVIII.

## *Miscellaneous Observations and Cases.*

### CASE I.

### *Broken Wind apparently cured.*

A HORSE, so completely broken-winded as to be unfit for work and not worth his keep, was purchased for the purpose of making some experiments relative to the glanders. He was turned into a burying-ground, where the grass was very bare, several asses having been previously kept in it. Here he was kept more than a month without water, or any other food than the ground afforded, yet he did not appear to become thinner than he was at first, but his cough entirely ceased, and his breathing became perfectly free. At the end of a month, having become badly glandered in consequence of the experiments that had been made on him, he was destroyed. On examining the lungs, they were found perfectly healthy, excepting some small tubercles, exactly like those that take place in glanders.

Another horse, purchased for the same purpose, was kept more than two months in this burying-ground, during the dryest time of the last summer, without water: he did not appear to suffer any inconvenience from it: and, when destroyed, every part looked healthy, and the contents of the bowels were quite as moist as we usually find them in horses that have not drank for several hours before death. This was not a case of broken wind, but is noticed merely to show, that, when a horse is kept out, he can bear the deprivation of water better than is commonly supposed; and I am convinced, that the most essential part of the treatment of chronic cough consists in allowing only a small quantity of water and hay: and without this precaution medicine will do no good. I am inclined to believe, also, that horses disposed to swelling of the legs should be kept short of water: at the same time, they should be allowed only a moderate quantity of good hay; as a large quantity, particularly of bad hay, would tend to excite thirst.

### CASE II.

*Obstinate Grease cured by a Strong Solution of Sublimate.*

A cart mare had that disease of the hind legs

termed grease in a very painful degree; it was not that kind of grease we commonly meet with, where there is white, healthy-looking matter discharged from the legs and heels, without any considerable pain. In this case, the fluid was thin, of a very dark colour, and extremely fetid.

The person to whom the mare belonged had been applying turnip poultices without effect, and had given some diuretic balls. I directed that the legs should be fomented for a considerable time with warm water, with a small proportion of Goulard, and, immediately after, a Goulard poultice. This plan was persevered in about a week without doing the least good: I then for the first time tried the following solution of sublimate.

| | |
|---|---|
| Corrosive sublimate . | 1 dram. |
| Muriatic acid . . . | 3 drams. |
| Water . . . . . . . . | 1 pint. |

This was well rubbed upon the affected parts. The following morning, the disease appeared rather better. The solution, therefore, was again applied, with a double quantity of sublimate and acid; and, by pursuing this three or four days, the legs got perfectly well.

Some time after, a case of the same kind occurred in a saddle horse; and, as the usual remedies

had afforded no relief, after a fair trial, the solution of sublimate was resorted to. In this case, there was a larger proportion of sublimate and acid than in the former; so much, that it acted as a blister; but the complaint was effectually cured, and has not returned, though nearly two years have elapsed since that time. It is necessary to observe, that, in both these cases, not only had the usual external remedies been fairly tried, but the internal remedies also, such as physic, diuretics, &c., before this application was resorted to.

### CASE III.

### *A Horse destroyed by Tobacco.*

A gentleman, whose horse was in perfect health, but had not so smooth a coat as he wished, was advised by a groom, to give him some tobacco steeped in beer. He accordingly procured, I believe, one ounce of the strongest tobacco, and infused it, during the night, in some beer; the next morning, the liquid part was strained off, and given to the horse; about two minutes after, he dropped down, and died.

## CASE IV.

### *Locked Jaw cured by Exposure to extreme Cold.*

Mr. Blanchard, veterinary surgeon of the 3rd dragoons, had a horse attacked with complete locked jaw. It was in the winter season, and the weather was extremely cold and stormy. At night, he was turned into the barrack yard; and, the next morning, found perfectly free from the complaint.

## CASE V.

### *On the Danger of riding or driving Horses fast, when their Stomachs are full.*

It is a very common opinion, among those concerned with post or coach horses, that, to enable them to do their work well, it is necessary they should have "plenty of meat in their bellies;" and they are generally allowed to feed until the moment they are put in harness, and then driven off at a full trot.

The injurious tendency of this practice must be sufficiently obvious to every man of reflection; but, unfortunately, the management of these poor animals is too often intrusted to men, who do not

appear to possess this faculty in a very high degree.

The mischievous practice of plunging them into the river the moment they come off a journey is still very prevalent. And it is to this cause, with that of driving them upon a full stomach, that we may attribute the frequent occurrence of inflammation of the bowels among post and coach horses. About six months ago, I examined a horse that had been destroyed in this way: he had been driven a distance of fifteen miles, but was brought through the last four with great difficulty, having fallen several times. I did not see the horse until he was dying, but found he had been bled in the mouth—a sovereign remedy among coachmen for inflamed bowels or gripes—and had taken two or three bottles of Daffy's elixir. On examining the body after death, I found the stomach nearly full of undigested food, consisting of beans, oats, and hay. A short time before this, I examined another post horse, that was destroyed in the same manner, and found the stomach in a similar state. In both cases, the bowels were highly inflamed.

It appears to me, that the best method of treating horses of this description would be to give them a small feed as soon as they get in, and very little water; they may then be taken out for clean-

ing; when returned to the stable, another feed may be given, and a larger quantity of water. By feeding in this gradual way, digestion would go on readily; the stomach would not be oppressed; and, when satisfied, the horse would lie down and rest comfortably, so as to recruit his strength for the next journey. But when the stomach is suddenly filled, he feels heavy and uncomfortable, the digestive powers are weakened, and, when taken out for work, he appears dispirited and unfit for the exertion.

## CASE VI.

*Constitutional Glanders produced by Inoculation, where only one Nostril was affected.*

A horse, with incurable lameness, was taken from a field adjoining the kennel where he was kept as a dog horse, and inoculated with glanderous matter on both sides of the neck. He was again turned out: the inoculated part became an ulcer, which did not spread as it usually does; but in about a fortnight a very slight discharge appeared at one nostril, with a trifling enlargement of the glands on that side. So little was there discharged, that it would not have been observed by a person unaccustomed to examine horses of

this description. He continued in this state more than three months, about which time the discharge became considerable, and an ulcer could be seen within the nostril; the glands, also, were much enlarged: but there was not the slightest discharge from the other nostril, nor were the glands on that side at all enlarged. The horse was now destroyed; and, on examining the head, matter was found in the frontal sinus or cavity, on the same side as the affected nostril: there was a large ulcer within the nostril, that was too high to be perceived during life, and there were tubercles in the lungs. This case most strikingly proves, that, when glanders appear only at one nostril, they are a constitutional disease; it also shows, that tubercles may almost be considered as an invariable consequence of the disease.

## CASE VII.

A horse, in feeding hastily, was attacked suddenly with great difficulty of breathing, which, in a short time, became extremely distressing: the wheezing noise he made in breathing was so loud, that it might be heard at a considerable distance. A probang, or long rod of whalebone, with a small piece of oiled sponge fastened to the end of it, had been

passed into the œsophagus, or passage leading to the stomach, from a supposition that something was lodged at its upper part; but it appeared rather to increase the horse's distress.

I was convinced that some oats had got into the larynx, or upper part of the windpipe, and proposed making an opening in the windpipe, for the purpose of removing them, as the only means by which the horse's life could be saved. I had some difficulty in persuading the owner to allow me to perform the operation, as it is commonly believed, by persons unacquainted with surgery, that a wound in the windpipe is certainly fatal: finding, however, that he was speedily getting worse, and being satisfied that he would die, unless relieved, he consented to what he called cutting the horse's throat. A longitudinal incision was made in the skin, about four inches below the top of the windpipe; the edges were turned aside, and the surface of the windpipe exposed; an opening was made in it sufficiently large to admit a tube of about half an inch diameter; a probang was put into the hole that had been made in the windpipe, and passed up through its larynx, or upper part, with a view to remove any extraneous body that might be lodged there; it was then withdrawn, and a tube placed in the opening. The horse was evidently

relieved in some degree immediately; and, in a few hours, appeared quite free from pain. There was still, however, a discharge of matter from the nostrils, as well as from the opening in the windpipe, considerable inflammation having been produced about the larynx and parts connected with it. All this gradually subsided, and the horse perfectly recovered; but it was three or four weeks before the wound in the windpipe was completely healed. It is worth remarking, that, although the tube was left in the windpipe about twelve hours, it did not appear to occasion the least inconvenience.

### CASE VIII.

One ounce of sugar of lead (acetat of lead) was given to a glandered horse, without producing the slightest effect; the next day, two ounces; and the following day, four ounces were given: but no sensible effect was produced.

Four ounces of emetic tartar were given at one dose: after some time, the horse appeared to be sick, and refused his food: he continued in this state four or five hours; after which he recovered, and soon began to feed again. The bowels were not in the least degree affected.

Two drams of stavesacre were given at a dose:

after a few hours, the horse became very uneasy, and refused his food; the pulse weak and frequent. During the following night, he died.

### CASE IX.

A circumstance occurred, last summer, in the neighbourhood of Dawlish, which appears to prove, that the staggers are not contagious. Several horses died of this disease, but no one lost more than a single horse; one farmer had a second horse attacked, but he recovered. The farrier who related the circumstance to me, attributed the recovery of this horse to two causes. The first was his having taken a purgative previous to the attack, which was given as a preventive; the second was a mixture he gave the horse some time after the disease was observed, consisting of the following drugs:

| | |
|---|---|
| Nitre . . . . . . . . | 2 oz. |
| Flowers of sulphur . . | 4 oz. |
| Aloes . . . . . . . . | 1 oz. |

In all the horses that died, the stomach was found full of hard undigested food.

## CHAPTER XXXIX.

### *Precautions to be observed in purchasing Horses.*

THE numerous shades, which exist between a state of perfect soundness, in horses, and those obvious diseases, or defects, which so clearly constitute unsoundness as to admit of no doubt on the subject, often occasion much trouble and perplexity in the purchase or sale of these animals.

If a person, inexperienced in the mysteries of horse-dealing, wish to purchase a horse, he would do well to consult a professional man, or some one capable of guarding him against any deception that might be attempted, and of pointing out any defects there may be of too obscure a nature to attract his notice. When such assistance cannot be procured, the following hints may, perhaps, be found useful.

It would be useless to attempt a minute examination of a horse, while the dealer or his assistants are present; the unequal surface upon which he stands, the constant fear he feels of the whip, and the highflown panegyrics lavished upon him, are

so perplexing to a person unaccustomed to the business, that he is apt to overlook the most palpable defects: nor is it possible for the most experienced to examine him with all the accuracy and attention that are necessary; as an unobserved flourish of the whip, or some other private hint from the seller, keeps the horse constantly in motion, particularly when the eye happens to be directed to a part that he does not wish to be inspected. I do not mean to say, that this is always the case: there are many dealers, no doubt, of strict integrity, who afford ample opportunity to those who wish to examine their horses; and, so far from wishing to practise any deception upon the inexperienced, will never warrant a horse to be sound, unless they are convinced that he is really so: but that there are men in the business, who have recourse to a variety of tricks to deceive the unwary, is too notorious to be doubted. It is advisable, therefore, after taking a general view of the animal, so as to be satisfied, with respect to his figure and action, to ride him off to some convenient place, where he may be examined without interruption.

The first and most important point to be inquired is the state of the feet and limbs, and whether the horse be in any degree lame or not. And though he appear perfectly firm and free from

lameness in all his paces, it will be necessary to inspect carefully the feet and limbs; lest there be any defect, which, at some future period, may occasion lameness. It is a fact pretty well known to horsedealers*, that a slight degree of lameness is easily concealed, particularly in high-spirited horses, by the stimulus of the whip and spur, and supporting the head with the bridle. To ascertain, therefore, whether a horse be lame or not, he should not be rode; but a person should be made to run before him, holding the end of the bridle, that the head may receive no support from it; the slightest lameness will then be readily perceived, particularly if the trial be made on rough ground, and on am oderate declivity.

Should it appear, that the horse is perfectly free from lameness, the feet and legs are to be carefully inspected, beginning with the former, which should

* In a book, published a few years since, on this subject, by Mr. R. Lawrence, he observes, that there are two kinds of horse-dealers—the common, and the gentleman dealer; and that there is this distinction between them: "the former is obliged to warrant a horse sound before he can sell him; whereas the latter simply avers, that he *believes* the horse to be sound, but *that it is not his custom* to give a warranty. Thus, the first is bound by law; the latter by honour: nevertheless, there are some *eccentric and narrow-minded purchasers*, who, in spite of the numerous bright examples of modern honour, prefer the former mode of dealing to the latter."

be first viewed in front, as the horse stands, to observe if there be any difference in the form or size of the hoofs. If the feet are very small, and particularly if one foot appears smaller than the other, it affords reasonable cause for suspicion, that there is some serious defect: the bottom of the foot is then to be examined; and, if the heels are much contracted, the frog imperfect, and matter issuing from its cleft or division, it is probable that the horse will soon become lame. I would not advise, that a horse be rejected merely because the feet have become rather narrow at the heels, and smaller than they were originally. If no difference can be perceived in the size of the feet; if the frogs appear sound, and free from thrushes; and particularly if, at the same time, the horse step boldly and firmly when trotted on rough ground and down a hill; I think he may be safely purchased, if free from all other defects. The next point to be attended to is the form of the sole, or bottom of the foot, which is, in its natural state, rather hollow, or concave: we sometimes, however, find it quite flat, or even convex: in either case, it is proportionally thin and unfit for the office it seems to be designed for, that is, to protect the sensible or fleshy sole, which it covers. The flat sole, however, is by no means so serious a defect as the

convex, and, if the horse is carefully shoed, seldom occasions lameness; but, when the sole is in any degree convex, or projecting, it is extremely thin and incapable of bearing much pressure. A horse with this defect will sometimes step firmly when the sole is protected by a wide, hollow shoe; but he is constantly liable to become lame by gravel getting under the shoe. We generally find, in this kind of foot, that the front of the hoof, or wall, has lost its natural form, having become flatter; it is also thinner, and more brittle, than it is naturally; so that it is difficult to nail on a shoe securely without wounding or *pricking* the foot, as it is termed. This defect, therefore, is of a serious nature, and constitutes unsoundness.

Sandcrack is an important defect, when it runs longitudinally from the coronet into the hoof, and is so deep as to affect the sensible parts of the foot: sometimes, however, it is very superficial, or in a horizontal direction, and perhaps too trifling to deserve notice. It should be recollected, however, that these trifling cracks in the hoof indicate an unnatural dryness of the horn, and, consequently, a tendency to sandcrack: therefore, when such a horse is purchased, proper means should be employed to improve the state of the hoof.

There is no part of the horse which requires a

more careful inspection than the foot; for it sometimes happens, that lameness is for a time removed by rest, or a run at grass, and may not again appear, until the horse is put to work. Horses that are foundered are generally much relieved, and sometimes apparently cured, by running at grass; but the lameness invariably returns when the horse is worked or kept in a stable.

A horse's foot may have suffered so far by bad shoeing, improper management, or some unknown cause, that, although lameness may not have taken place at the time of purchase, yet, from its appearance, it may reasonably be suspected that he will soon become lame. Should such a horse be purchased with a warranty of soundness, he could not perhaps be legally returned, if lameness take place two or three weeks afterwards; as the seller would be able to prove, that the horse had not been lame up to the time he was purchased. It may be said, perhaps, that the defect in the foot was observed at that time; but it is well known, that we rarely meet with a horse, at the age of six, whose feet are not more or less imperfect, and that a considerable alteration in form sometimes takes place without causing lameness.

*Cutting* is a defect often met with; and when it is considerable, that is, when the scar on the in-

side is large, the parts surrounding thickened and enlarged, and if it appears also to have been recently wounded, it may be deemed a serious imperfection. Cutting on the inside, and immediately below the knee joint, or the *speedy cut*, as it is termed, is also a material defect, as it sometimes causes a horse to fall suddenly in trotting or galloping.

The back sinews are next to be examined, by passing the hand down the back part of the leg. If the tendon, or sinew, can be distinctly felt, with the suspensory ligament, which lies immediately under it; if the tendon feel clean, and free from swelling; and if the leg, on a side view, appear flat, clean, and sinewy, as it is termed: it may be considered as a sound, well-formed leg. But i the leg, on a side view, appear rather round than flat; if the sinew and ligament cannot be distinctly and separately felt; and particularly if one leg is larger than the other: it may be concluded, that the part has sustained some injury, and that there is a probability of the horse becoming lame, when put to hard work.

If any mark be found on the knees, it is the safest plan to infer, that it was occasioned by falling; though the seller should affirm, that it hap-

pened in going over the bar, stepping into a boat, or by striking it against the manger.

Few horses are entirely free from splents: they need not, therefore, be regarded, unless of a large size, immediately below the knee joint, or so near the back sinew, or suspensory ligament, as to interfere with their action.

In examining the hind legs, begin with the hock; and if there be any spavin, it may be seen most readily by looking between the hocks. The bones, which form the projection on the inside of the hock, are in some horses rather larger than in others, which should not be mistaken for bone spavin: but there is no great difficulty in making the distinction; for, should both hocks be affected with spavin, it rarely happens that they are exactly alike, or of the same size; and when one hock only is affected, the difference is sufficiently manifest to point out the disease. A side view of the hocks should next be taken; and if there be a curb, it will readily be perceived. Observe, in the next place, if there be any ringbone upon the pastern, which, though a considerable defect, does not always produce lameness. I have lately seen a mare, that was purchased about two years ago, with a ringbone on the hind pastern. She was

not lame from it, and never has been since that time, though hunted regularly for two seasons.

In examining the bottom of the hind foot, we have only to ascertain that it is not affected with canker, or very bad thrushes.

Some horses have a tendency to swelling of the hind legs, or to that discharge from the heels, which constitutes the disease termed grease: and horses with white legs seem to be more disposed to this complaint than others. When a horse's hind legs, therefore, appear to be swollen; if the hair about the heels appear rough, or furzy; if there be scars on the heels, or an appearance of their having been affected with cracks or ulcers; it may be inferred, that the horse is subject to grease and swelling of the legs.

Having finished our examination of the feet and limbs, we should proceed to the eye, which is an important part, and requires the most careful inspection. The most favourable situation for viewing the eye, is at the stable door, or under a shed; for when too much light falls upon the eye, so much is reflected by its cornea, or surface, that it is difficult to see the internal parts.

The age at which the eyes most frequently become diseased is from five to six; next to that, from four to five; sometimes, but not often, it

happens after six; after seven, the disease rarely occurs, except from accidents, to which, of course, they are equally exposed at all ages. In purchasing a horse, therefore, about five years old, it is necessary to be particularly attentive to the state of the eyes. If they appear dull, cloudy, or watery; if the lids appear to be more closed than usual; if the inner corner of the eyelid appear puckered up; and particularly if there be a manifest difference in the appearance of the eyes; they may justly be suspected of unsoundness.

Having taken a general view of the eye, the pupil, or dark bluish oblong spot in its centre, should be closely and carefully examined; if a difference is perceived in the size of the two pupils; if, instead of a dark-blue colour, they appear cloudy, or if white specks are seen in them; a diseased state of the organ is indicated. I have often observed, however, that, when a small speck has formed in the pupil, it does not gradually increase, as by many it is supposed to do; on the contrary, I have, in many instances, known it remain in the same state for years, without causing any material impediment to vision. I should not, therefore, reject a horse simply on account of this defect; that is, if the eyes appeared perfectly healthy in every other respect, and particularly if the speck was small,

nearer the edge than the centre of the pupil, and only in one eye: it would be advisable, however, to be certain that the pupils are alike in size; that they become small, when the eyes are exposed to a strong light, and enlarge again when the horse is brought into a darker situation.

When an imperfection is observed in the eye, it is frequently said to arise from a bite, or blow, or from hay-seeds falling into it; but, though the seller should positively affirm this to be the cause of the imperfection, I should always be inclined to doubt it: because experience has taught me, that the diseases of the horse's eye almost always arise from internal causes; that, however trifling in appearance, they are really of a serious nature, and most commonly, even after they have been apparently cured, terminate, sooner or later, in blindness. Too much caution, therefore, cannot be observed in examining this important part.

When the eyes become inflamed from a blow, or bite, or from any dust getting into them, the disease, although apparently considerable, is seldom of long continuance; that is, when the injury is not severe, and proper means are employed for its removal. But when the inflammation has subsided, there often remains on the surface of the eye an opaque spot or *film*, as it is termed;

which, in severe injuries, extends over the whole of the cornea, or surface of the eye. After a little time, by applying the remedies directed in vol. i, this opacity gradually diminishes, and sometimes wholly disappears; more commonly, however, a small film remains, which does not, in any material degree, impede vision: this defect, therefore, is of no importance, and may safely be overlooked, provided the purchaser is certain, that the opacity is really on the surface, and not in the pupil of the eye, and that the other parts appear bright, and free from every kind of imperfection. As a farther security, a condition may be annexed to the warranty, by which the horse may be returned in three or four months, should the imperfection prove to be of a serious nature. When a complete cataract takes place, which is known by the pupil being of a white or pearl colour, the strength of the other eye is generally restored, and it rarely becomes diseased afterwards, except from accidents: he may, therefore, be safely purchased as a one-eyed horse.

We have now to extend our investigation to another point, that is, the state of the wind, or, rather, of the lungs, and parts connected with them. When a horse is absolutely broken-winded, there is no difficulty in detecting the disease; the la-

borious breathing, or working of the flanks, particularly in going up a hill; and the short asthmatic cough; are symptoms, which cannot escape observation. Between this state of the lungs and perfect health, there are many degrees; and it is the intermediate defects that we find most difficulty in discovering. The criterion, by which dealers judge of the state of the wind, is by no means a bad one: they make the horse cough, by pinching or grasping the top of the windpipe: if the lungs are in that state, which constitutes broken wind, or if they are approaching to that state, the sound of the cough is so peculiar, that it cannot well be mistaken; it is short and husky, exactly like that of an asthmatic person. When this kind of cough is observed, the horse should be rejected, even if the motion of the flanks appear perfectly easy and regular. I have, in several instances, known broken wind apparently cured by keeping a horse at grass; that is, he seemed to breathe with ease, and did not cough when moderately exercised; but, by pinching the throat, there was still that peculiar cough; and, by keeping him in the stable a few days, he became as bad as ever. It is advisable, however, for those, who have often occasion to purchase horses, to make themselves familiar with the sound of this asthmatic, or broken-

winded cough: there will be no difficulty in this, as the complaint is very common. Horses are more liable to coughs than other domestic animals, probably from the sudden changes of temperature to which they are exposed. The complaint is sometimes of little importance, and, with care, easily removed: it often proves, however, extremely obstinate, and not unfrequently incurable. When a horse is observed to have a cough at the time of purchasing, it is necessary to inquire, whether it be a recent complaint, or one of long standing; and this is a point that cannot be always easily determined. In the old, or chronic cough, as it is termed, the horse generally appears lively, feeds heartily, and appears, in every other respect, to be in perfect health: sometimes the sound of the cough is husky, or asthmatic, which indicates a tendency to broken wind; more commonly, it is loud and clear; the fit of coughing is generally violent, and the horse often appears as if some extraneous body had got into the windpipe, and he was endeavouring to cough it up.

The chronic cough is most considerable when the horse is first put in motion: by continuing the exercise, it gradually ceases; after which, the horse may be rode a long journey without coughing. I have often observed, that horses with chro-

nic cough are very shy of having their throats touched; often rearing and making considerable resistance, when any one attempts to make them cough by grasping the top of the windpipe. And in many instances I have observed, that he cannot be made to cough in this way, however strongly the windpipe be grasped; this, probably, as well as the shyness he manifests on the occasion, may arise from the trial having been often made upon him.

In the recent cough, the horse generally appears rather dull, and looks like a horse labouring under a catarrh, or cold: he readily coughs, when the windpipe is pinched; in doing which, there is no difficulty, as the horse seldom makes any considerable resistance. In the recent cough, moderate trotting is sufficient to excite coughing, which is seldom diminished by continuing the exercise. In the chronic cough, the horse is sometimes relieved by throwing up mucus through the nostrils, and the cough is often so moderated, by strict attention to his diet and exercise, as to appear scarcely worth notice; I have also known it completely suppressed for the space of a day by means of opium. When a horse, therefore, is observed to have a cough, the purchaser may not always be able to determine, whether the complaint be unimportant, or of long standing and incurable. In

such doubtful cases, it would perhaps be the most prudent plan, to secure himself by having a suitable condition added to the warranty.

There is another complaint of the lungs, or parts connected with them, and an incurable one, which the purchaser should be guarded against. This disease is named *roaring*, from the wheezing noise a horse makes when rode fast, particularly when galloped up a hill: it is sometimes so considerable, as to be heard at a distance of many yards; but in walking, or moderate exercise, it can seldom be perceived. The method which dealers usually employ to detect this complaint, at a repository, where no other trial is allowed, is to whip the horse under the belly, and make him turn suddenly, or by making him leap over the bar: if he is a roarer, this sudden exertion causes him to groan. But this criterion should never be depended upon, when an opportunity offers of galloping the horse.

The age of a horse is known by certain marks in the teeth; (see vol. i;) when these are worn out, artificial marks are sometimes made, to make the horse appear younger than he really is. It often happens, also, that some of the sucking, or colt's teeth, are drawn out; in which case, they are soon replaced by horse's, or permanent teeth:

this is done with a view to make a horse of three or four years old appear to be five. As experience alone can enable the purchaser to detect these deceptions, it is advisable to have the age of the horse always expressed on the warranty: he can then avail himself of the first opportunity that offers of obtaining correct information on the subject; and, if he has been deceived, will, no doubt, have a right to return the horse.

I have known persons so cautious, when about to purchase a horse, as to examine the neck; and, if they find marks of his having been bled often, they suspect, sometimes justly perhaps, that he has had some serious complaint. They have also thought it necessary to inspect the chest, belly, thighs, or the parts where rowels are usually placed; and, if they observe the marks, which generally remain after rowelling, they suspect it was done for a complaint of the eyes when the mark is under the throat or between the branches of the under jawbone; and if in other parts, for what they term humours, that is, swelling of the legs, or grease.

Having finished our examination of the horse, as it relates to soundness, we have to inquire, if he has any vicious habits, such as crib-biting, or if he is in any degree restive.

Crib-biting is a vicious habit, which often causes

a horse to become lean and weak, and sometimes renders him very subject to flatulent colic. It is, therefore, a defect of importance, and a frequent cause of unsoundness. In crib-biting, the horse lays hold of the manger with his teeth, and appears to be sucking in air with an almost convulsive effort, and a slight, grunting noise. The manner, in which this injures a horse has not been satisfactorily explained, but it is allowed by all to be an important defect. It may easily be detected, by watching the horse, for a short time, in the stable.

Restiveness is sometimes discovered by separating a horse from his companion after riding together a few miles, or, after riding him and bringing him back to his stable, by attempting to ride him off again: on these occasions, if a horse has any restiveness, he generally discovers it.

Before I finish this chapter, it may be proper to remind the reader, that we rarely meet with a horse that is in every respect perfect; and though, from the high price of the animal, it is necessary to be very cautious, yet it is possible, perhaps, to carry our caution too far; that is, there may be some trifling imperfection, such as a small splent, which is not worth noticing. One caution I always think necessary, however perfect the horse may appear; and this is, to have a receipt upon a

stamp, in the hand-writing of the seller, in which the horse is described, and warranted sound, and free from vice.

This will be found very useful, should any defect afterwards appear, which may render it necessary to return the horse. It is by many thought necessary, when a horse is returned, to put him into the stable of the seller, or to get him to receive the horse; but it has been established, in our courts of law, that this is not necessary; and that it is sufficient to give notice, by a witness, that the horse is unsound, or vicious, or is not what he was warranted to be, and that he is ready to be delivered up when sent for.

It is advisable, after purchasing, neither to have him shoed nor to give him any medicine, until satisfied, by a sufficient trial, that he is in every respect sound.

Perhaps I have dwelt longer upon this subject than some of my readers may think necessary; but it should be recollected, that it is intended only for those that are inexperienced in horses. It may be thought, also, what I have written may tend to excite an unjust prejudice in the minds of those to whom it is addressed; or that it may make them over-cautious, and induce them to reject horses without sufficient reason: but, if we take into con-

sideration the many defects or diseases, to which horses are liable ; the difficulty of detecting them ; the numerous deceptions that are practised ; and the shifts and evasions sometimes resorted to ; I trust, that, in what I have written, the candid reader will not accuse me of having gone too far, or that it will excite an undue prejudice against the horse-dealer. I am aware, that there are men, in that *profession*, who would descend to the deceptive practices I have occasionally hinted at ; but have no doubt, that there are also to be found among them men of integrity and honour.

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THE END.

DIRECTIONS TO THE BINDER.

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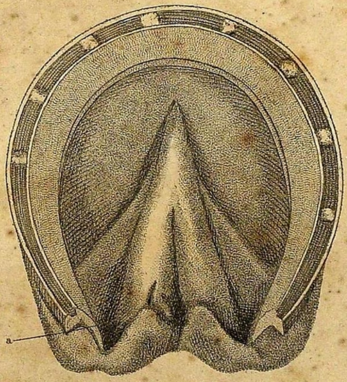
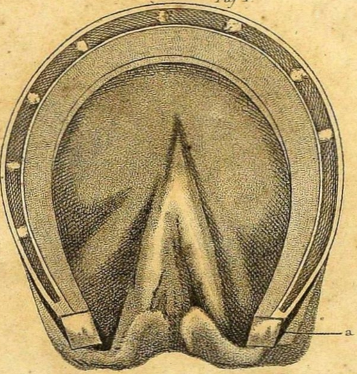
Mr. Coleman's Patent Shoe.



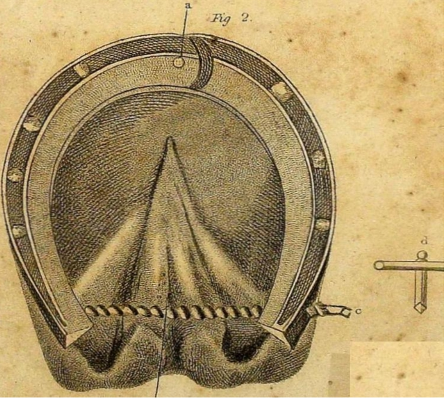
The expanding Shoe.

Fig 1.




The old screw Shoe.

Fig 2.



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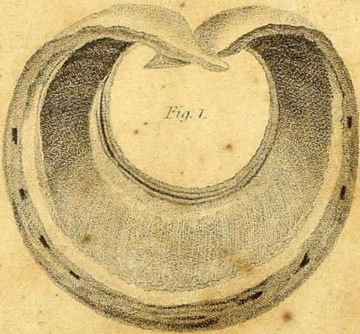

Fig. 1.

Fig. 2.

ynes Ex.gr. del.t I. Sailliar, sculp